

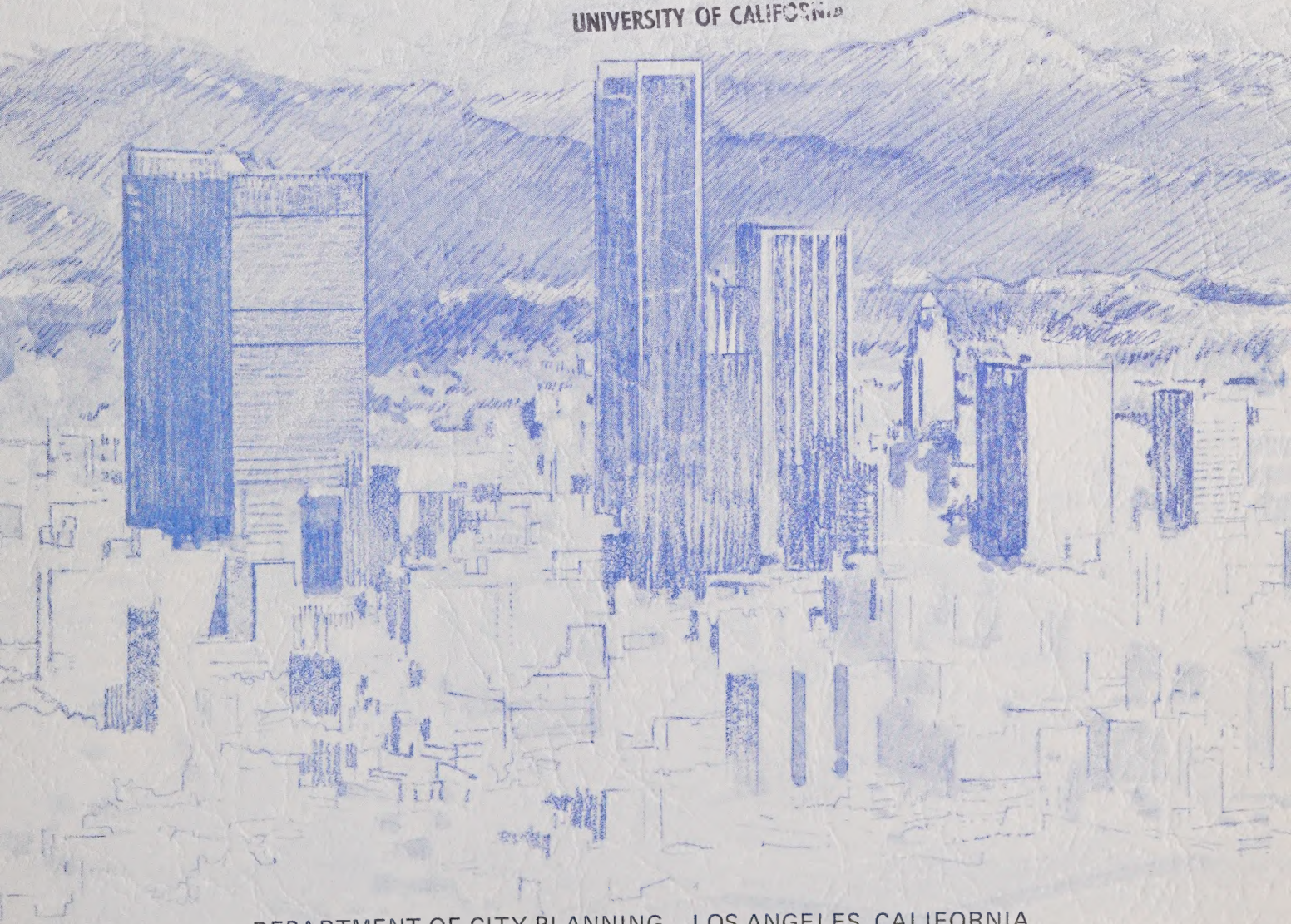
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# AIR QUALITY MANAGEMENT PLAN

INSTITUTE OF GOVERNMENTAL  
STUDIES

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UNIVERSITY OF CALIFORNIA



DEPARTMENT OF CITY PLANNING, LOS ANGELES, CALIFORNIA





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AIR QUALITY  
MANAGEMENT PLAN AND  
IMPLEMENTATION REPORT

AN ELEMENT OF THE GENERAL PLAN

Adopted by the City Council  
March 28, 1979

Prepared by the Department  
of City Planning

Los Angeles, California

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April, 1979



## TABLE OF CONTENTS

### AIR QUALITY MANAGEMENT PLAN AND IMPLEMENTATION REPORT

	<u>Page</u>
PREFACE . . . . .	i
PROPOSED AIR QUALITY PLAN	
Introduction . . . . .	1
Purpose . . . . .	1
Objectives . . . . .	2
Features of the Plan . . . . .	2
Policies . . . . .	4
IMPLEMENTATION SECTION	
A. Programs	
Recommended Programs . . . . .	6
Contributory Programs . . . . .	7
Programs For Further Consideration Studies/Pre-1976 Programs/District Requirements . . . . .	8
Rejected Programs . . . . .	9
B. Monitoring System/Implementation Tools . . . . .	10
C. Implementation Schedule . . . . .	11
APPENDIX A: Description of City Programs . . . . .	15
APPENDIX B: Program Evaluation . . . . .	A-1
APPENDIX C: SCAG Recommended Programs . . . . .	B-1
APPENDIX D: SCAG Non-Recommended Programs . . . . .	C-1
APPENDIX E: Regional Programs Requiring City Implementation . . . . .	D-1
APPENDIX F: Emission Reduction for City Programs . . . . .	E-1
APPENDIX G: Legislative Programs . . . . .	F-1
	G-1





## PREFACE

This preface is explanatory and is not to be adopted as part of the Plan.

### THE NEED TO PREPARE A CITY AQMP

A proposed Air Quality Management Plan (AQMP) has been developed by the City of Los Angeles as its response to its acceptance of a designation by the Southern California Association of Governments (SCAG) as a "Sub-Regional Agency" within the South Coast Basin (October 12, 1977). Other designated subregional agencies include the Counties of Los Angeles, Orange, Riverside and San Bernardino. The 1977 amendments to the Clean Air Act require non-attainment areas, such as the South Coast Air Basin, to submit plans to the Environmental Protection Agency demonstrating how the area will attain primary ambient air quality standards by 1982. The Los Angeles City Proposed AQMP was prepared under contract with SCAG, which is preparing a Regional AQMP in conjunction with the South Coast Air Quality Management District (SCAQMD). The City's Preliminary AQMP was released October 30, 1978. Both the City and Regional AQMP's will be reviewed by the City Council as part of the SCAG adoption review process in February 1979. Afterward, the regional plan will go to the California Air Resources Board in February 1979 to become part of the State Implementation Plan required by the Environmental Protection Agency (EPA) by July, 1979. The City AQMP will be incorporated in the Regional AQMP.

The City's principal objective in preparing an AQMP is to aid the region in attaining and maintaining the National Ambient Air Quality standards while continuing economic growth and improvement in the quality of life afforded to City residents. The SCAG/SCAQMD Regional AQMP will be required to be implemented by State and local government agencies, including the City. The preparation of a local AQMP, while not required under the Federal Clean Air Act, will give the City the option to substitute some of its own programs for discretionary regional measures requiring local implementation which may not be as acceptable. Another benefit of a local plan is that it demonstrates a good faith effort on the part of Los Angeles to undertake its fair share of mitigation measures. Development of an adequate local plan provides the best opportunity for Los Angeles to avoid Federal sanctions that could apply for nondevelopment or poorly developed regional plans. The final reason to develop a local AQMP is to document how the City plans to implement local programs contained in the regional plan.

### Air Quality Standards

SCAG and SCAQMD have estimated how many tons of emissions can be emitted in the South Coast Air Basin in 1987 without violating the National Ambient Air Quality Standards of the Federal Clean Air Act and its 1977 amendments. Appendix B of the City AQMP contains the City's proportional share of these allowable emissions and required reductions.

The Federal standards have their counterpart at the State level in the Lewis Air Quality Management Act. However, unlike the Federal Clean Air Act, the Lewis Act does not have specific dates by which the air quality standards it identifies must be reached. It does, however, require a compliance schedule if standards will not be reached by June 1, 1980. The City's Air Quality Management Plan is focused on the Federal standards and attainment dates. The City, as a subregional agency to SCAG, may at some point in the future find it necessary to broaden the scope of the City's Plan to incorporate State standards and a compliance schedule that is consistent with Lewis Act requirements.



## Level of Effort

Local efforts can only achieve a partial overall improvement in air quality. The majority of the actions necessary to meet Clean Air Act standards will have to come on a regional level as part of the areawide plan developed by SCAG and the South Coast Air Quality Management District.

The City's Plan is designed to assure the City's contribution towards achieving the air quality goals in the Clean Air Act. After the nature and extent of this contribution has been determined through the implementation process contained in the Plan, the scope of the Plan may be expanded to include the more stringent State standards and goals for other pollutants not covered by Federal Standards but that are set forth in the Lewis Act.

## BENEFITS OF IMPROVED AIR QUALITY

The City's AQMP emphasizes the control of emissions that form photochemical oxidants, the most pervasive air quality problem in the region. Reducing the concentration of photochemical oxidants has three types of benefits:

- Improvements in Public Health

Photochemical oxidants have been found to cause eye irritation, nasal irritation, irritation of mucous membranes, respiratory distress and breathing difficulties, increased fluid in the lungs, coughing, rapid pulse rate, lowered blood pressure, asthma attacks, and overall decrease in the quality of human performance.

- Reduction in Damage to Vegetation

Oxidant injury to vegetation was first identified in 1944 in the Los Angeles basin. Observed effects on plant life include visible foliar injury and discoloration, increased leaf drop, reduced plant vigor, reduced plant growth, and death.

- Reduction in Damage to Other Materials

Just as with humans or plant life, air pollution can have negative effects on man-made materials. Ozone can accelerate the aging of rubber products and can cause dye fading in clothes, carpeting and other textiles. It can reduce the life of industrial maintenance paints and vinyl and acrylic coil coatings. Textile fibers can also be damaged by ozone, resulting in accelerated aging.

## REQUIRED PLAN CONTENTS

The responsibility of the City in meeting the Federal Clean Air Act standards is challenging. Los Angeles is required to undertake "all reasonably available control measures" and to "have adopted by statute, regulation, ordinance or other legally enforceable document, the necessary requirements and schedules and time tables for compliance and be committed to implement and enforce the appropriate elements of the plan." Strategies which must be considered in the City AQMP fall into the categories of land use, energy and transportation, since most stationary sources are covered in the stationary source control section of the Regional AQMP being prepared by the South Coast Air Quality Management District. Emission reduction estimates for each adopted or scheduled control measure are also required. "Provision for reasonable further progress towards attainment of primary and secondary standards in the period prior to the prescribed date for attainment" must be shown.



The State Air Resources Board (ARB) will evaluate the adequacy of the City AQMP during its review of the regional AQMP. The City and regional AQMP's will then be included in the State Implementation Plan (SIP). The Environmental Protection Agency (EPA) will then review and certify the adequacy of the SIP. The EPA has indicated that the definition of "reasonable" measures includes the following general program categories. The corresponding City (numbered programs) and SCAG (lettered programs) are listed in parentheses:

#### EPA-Required Transportation Programs

- a) Long-Range Transit Improvements (5, H-85, H-86, H-88, H-89)
- b) On-Street Parking Control (11)
- c) Park-and-Ride and Fringe Parking Lots (22, 32, 33, 38)
- d) Pedestrian Malls (24)
- e) Private Car Restrictions (11)
- f) Employer Programs to Encourage Car and Vanpooling, Mass Transit, Bicycling and Walking (22, 31, 36, 38)
- g) Bicycle Lanes and Storage Facilities (31)
- h) Staggered Work Hours (Flex - Time) (37)
- i) Traffic Flow Improvements (15, 16, 17, 18, 25, 26, 27, 30, 33, 41)
- j) Alternative Fuel or Engines and Other Fleet Vehicle Controls (74, 75)
- k) Improved Public Transit (5, 30, 32, 33, 43)
- l) Exclusive Bus and Carpool Lanes (25, H-85, H-88)
- m) Area Wide Carpool Programs (22, 36)

According to the EPA, only two control measures were initially considered "Unreasonable". They were retrofitting of existing cars with smog control devices and gas rationing. Any of the other general program categories from the above list rejected in an AQMP would have to have careful documentation to prove "infeasibility" or "impracticality" of implementation.

In addition to the above 13 categories, EPA requires six additional activities to be included in the SCAG and State Plans. The City may be asked to support some or all of the following:

- n) Vapor Recovery
- o) Road Pricing to Discourage Single-Occupancy Auto Trips
- p) Controls on Extended Vehicle Idling
- q) Other than Light-Duty Vehicle Retrofit
- r) Extreme Cold Start Emission Reduction Programs
- s) Inspection/Maintenance

The City's Draft AQMP addresses the Federal mandate by considering actions over which the City has direct or indirect control that will attempt to achieve the Clean Air Act standards by 1982. Various programs are included to address each of the subject areas listed by the EPA, while other voluntary City programs are included to indicate consideration of all reasonable, control measures. The City's definition of reasonably available measures will be determined by the further application of cost/effectiveness considerations prior to final program selection. In addition, further review of the Proposed Plan may indicate new programs to be included. Many of the programs considered for inclusion in the Proposed Plan are recently initiated programs which appear to offer reasonable ways to reduce air pollution; they should be continued subject to the availability of future City funds. A smaller, but still significant, group of new programs are proposed to be undertaken as funding permits.



## IMPLEMENTATION

Within the Implementation Tools and Monitoring System section of the City Plan, there are details of a specific monitoring system involving a new Air Quality Committee within the City administrative structure. The City must be prepared continually to document the status of its air quality activity, and this section explains how this can be achieved.

A process for documenting the air quality effects that new City Capital Improvement Projects and major new departmental work activities may have is also included in this section of the Plan.

## FEDERAL SANCTIONS

The City of Los Angeles recognizes the importance of a good faith planning and implementation effort. The Clean Air Act, as amended in 1977, provides for sanctions after July 1, 1979 if an adequate plan is not developed:

- 1) EPA may adopt its own implementation plan for the region that would also include the City;
- 2) EPA may withhold federal funds for all but essential health and safety related activities;
- 3) No major stationary sources (over 100 tons) can be built or modified after July 1979.

Once an adopted AQMP is submitted, Federal funds are not available for projects inconsistent with the plan. A more complete discussion of these sanctions is found in the Background Report, under Legal Requirements.

## RESOURCE LIMITATIONS

Due to the impact that the recent State constitutional amendment and other future tax reform proposals may have on continuing City expenditures, it must be clearly understood that the continued operation or initiation of any new program is entirely dependent upon available City staff and resources. No program in the Plan is intended to commit the City to expend unavailable resources. The actual implementation dates of each program remain variable because of the continuing uncertainty of the City's fiscal condition. In addition to being contingent upon City resources, implementation of all programs is subject to a current trade-off analysis that considers environmental, social and economic impacts.

## General Plan Consistency

Adopted programs and tactics contained in the City's Air Quality Management Plan will be incorporated into revisions of various elements of the City's General Plan and adopted as part of the new Environmental Element. Through the Plan's adoption as a General Plan Element the City's contribution to improving the region's air can be maximized, while simultaneously providing leadership and guidance in the regional air quality planning process.



## CALIFORNIA ENVIRONMENTAL QUALITY ACT-CLEARANCE

### Air Quality Management Plan- A portion of the Environmental Element of the General Plan of the City of Los Angeles - CPC 27576, All Council Districts.

In response to the Clean Air Act Amendments of 1977, municipalities, and/or regional councils of governments within designated State Air Basins must prepare implementation plans on how pollutant standards will be met by 1982. The City Council of Los Angeles voluntarily assumed responsibility for preparing a local Air Quality Management Plan (AQMP) on October 12, 1977, as permitted under the Lewis Act (AB 250), which encourages local plans in order to ensure the reflection of municipal concerns. Such local plans are intended to be complementary to required regional plans. An Environmental Impact Report (EIR) has been prepared for the regional (SCAG/SCAQMD) AQMP. The regional EIR is an analysis that examines both the cumulative and regional impacts of over 100 air pollution mitigation measures. The environmental benefits in addition to the social and economic impacts of each proposed control tactic are quantified and evaluated. The Regional draft EIR was formally reviewed from November 1, 1978 to December 15, 1978.

The City's AQMP contains recommended local programs as well as regional (SCAG/SCAQMD) programs dependent upon local implementation. The significant environmental issues involved in the City's AQMP are fully covered in the EIR prepared by SCAQMD and in Citywide Plan and Concept Los Angeles EIR (D220, CPC 23332), April, 1974. The specific mobile program of "Channelization of Traffic" (Program 15) has received environmental clearance by Article 7, Class 1, No. 15 of the California Environmental Quality Act, Categorical Exemptions. (Class 1, No. 15 includes traffic signs, signals, pavement markings including channelization using paint and raised markers.)





# AIR QUALITY MANAGEMENT PLAN

## INTRODUCTION

The Federal Clean Air Act Amendments of 1977 set forth National Ambient Air Quality standards for five specific pollutants that must be met by 1982. The standards have been established at those levels necessary to maintain human health. These established standards will also have a salutary effect on the agricultural and other sectors of human activity that are negatively impacted by polluted air. The National Academy of Science continually reviews ongoing research that may result in modification of Ambient Air Quality Standards when justified.

The plan addresses pollution abatement at the fundamental level of the impact of urban form on air quality. The Plan projects a 1985 population of 3,436,600 for the City, which includes an estimate of the undercount and illegal alien population. The Plan assumes that growth in determining the control tactics necessary to meet the 1982 standards. Air pollution should be immediately mitigated by implementing selected control measures, while simultaneously planning a gradual rearrangement of the location, population, and distribution of people and activities in accordance with the City's adopted Concept Los Angeles. By stressing both immediate air pollution mitigation and long-range changes in the conditions that support it, this Plan is aimed at correcting not only the symptoms of air pollution but certain of its basic causes.

The adopted programs in the City's Air Quality Management Plan are guidelines for future implementation. The availability of City funds and staff as well as overall City priorities will obviously determine the ultimate implementation date of each program. Due to the impact that the recent State constitutional amendment and other future tax reform proposals may have on continuing City expenditures, it must be clearly understood that the continued operation or initiation of any new program is entirely dependent upon available City staff and resources. No program in the Plan is intended to commit the City to expend unavailable resources. The actual implementation dates of each program remain variable because of the continuing uncertainty of the City's fiscal condition. In addition to contingency upon City resources, implementation of all programs is subject to a current trade-off analysis that considers environmental, social and economic impacts.

## PURPOSE

The purpose of the Air Quality Management Plan (AQMP) is to serve as an official guide to the City Council and the Mayor; the City Planning Commission, other concerned governmental agencies; individual citizens and businessmen; and private organizations concerned with air quality and the environment. For the Council, the Mayor, and the Planning Commission, the Plan provides a reference to be used in connection with their actions on various city development matters, as required by State and Federal law. Los Angeles is required to undertake "all reasonably available control measures" and to "have adopted by statute, regulation, ordinance or other legally enforceable document, the necessary requirements and schedules and time tables for compliance with the Federal Clean Air Act and to serve as a commitment to implement and enforce the appropriate elements of the plan."

The local AQMP relates the City of Los Angeles to the regional air basin. The Plan recommends possible actions, over which the City has direct or indirect control, that will help achieve the Clean Air Act Standards. Various programs are included to address each of the required categories enumerated by the Environmental Protection Agency, while other voluntary City programs are included to indicate consideration has been made of all reasonable control measures. The City's definition of reasonably available measures will be affected by the further application of cost/effectiveness considerations and the results of the environmental review process prior to final program selection.

City efforts can only achieve a partial overall improvement in air quality. The majority of the actions necessary to meet Clean Air standards will have to come through implementation of the SCAG/SCAQMD Air Quality Management Plan at the regional level.

The City Plan includes policies which, when implemented will result in a gradual transformation of the City's urban form into a configuration that will broaden the residential and transportation options of our citizens.

This plan is subject to review and amendment, as necessary, to reflect changes in circumstances.

## OBJECTIVES

1. To attain and maintain National Ambient Air Quality Standards while continuing economic growth and improvement in the quality of life afforded to the citizens of Los Angeles.
2. To implement every reasonable control measure that is within the ability of the City to undertake.
3. To begin the immediate implementation of all feasible short- and medium-range abatement measures.
4. To encourage an incremental evolution of the form of the City into a more compact and efficient configuration that leads to a long-term, lasting reduction in emissions. The land use and housing measures contained in the AQMP and a revision of the General Plan Elements to reflect air quality priorities should be implemented toward this end.
5. To maintain a politically and economically viable balance between the achievement of clean air and the other major goals of the city.
6. To acquaint the public with the seriousness of air pollution, and ways they can assist in reducing pollutants.
7. To provide the basis for coordination of City activities with air quality programs throughout the region.

## FEATURES OF THE PLAN

### Local Contribution

Initial calculations indicate that the City will meet it's share of the required emissions reduction by 1987 (See Appendix B). Although the exact amount of pollution reduction that each measure will bring about has not, with some exceptions, been completely quantified. While the best preliminary data available from SCAG, the District and City Departments were utilized in the evaluations, further refinement will take place as a part of the Plan's implementation monitoring and refinement process.



The level of government at which EPA would impose sanctions has not been made explicit. Sanctions can be applied at the regional level or against the level of government that fails to take action. The City must be prepared to implement tactics that will complement the control strategies in the adopted Regional AQMP. Should the regional AQMP or the State Implementation Plan be judged deficient, the City's best hope to negotiate an exemption from sanctions appears to reside in demonstrating a thoroughly exhaustive effort in the preparation of its own local Plan.

#### Program Recommendations

While over 100 programs were considered, only a limited number of carefully evaluated programs are recommended for adoption at this time, for the following reasons:

1. Capability of Implementation. By adopting AQMP programs the City is committing itself to implementing projects to achieve Federal Clean Air Act requirements. Failure by the Mayor/Council to implement an adopted program or an equivalent substitute, assuming funds are available locally, could lead to the imposition of sanctions against the City or the region. The Plan, therefore, only recommends programs that can actually be implemented, given funding expectations.
2. Effectiveness. Those programs determined to be effective in achieving air quality standards are recommended for adoption at the present time.
3. Feasibility. In addition to effectiveness, the programs in this plan have also been evaluated in terms of their social, economic, and political impacts. At the time of implementation, consideration to financial constraints will be given.
4. Unacceptable Programs. The Clean Air Act requires that the rejection of programs be based on a rational determination of "unnecessary or ineffective". Consistent with this constraint, the Proposed AQMP contains recommendations and justifications for the formal rejection by the City of certain programs.
5. Consideration of Reasonably Available Measures. All of the programs considered are listed and described in the Program section of the Implementation Report and described in Appendix A. A number of these were not recommended for either adoption or rejection because their impact on air quality could not be precisely determined without additional study. Among this group may be programs that could offer potential improvements in air quality.

The Adopted Plan lacks some of the data necessary to measure the extent to which implementation of the programs in the City's AQMP will contribute towards achievement of clean air in the region. It will not be possible to assess the total effect the programs will have on contributing to overall improvement to the region's air quality until: 1) additional detailed baseline and projected emission data for air quality are obtained, 2) the effects of ongoing programs are fully quantified, and 3) various new programs whose long-term benefits can only be estimated at present are more fully evaluated. The Implementation Section recommends the means to acquire data on emission reductions and costs on individual programs.

In the future, additional long-range programs need to be identified, evaluated, and incorporated into the subsequent EPA-mandated two-year revision of the City's AQMP. This new work should be undertaken in conjunction with the continuing refinement of the programs contained in this Plan. Such Plan revisions will necessitate a continuing effort to incorporate citizen and private sector participation and voluntary actions that can be taken to improve air quality.

#### Administrative Actions

1. Emergency Air Episode. While not part of the local AQMP, the City has, pursuant to the Air Quality Management District Rule VII, adopted an Emergency Episode Plan designation to reduce emissions from City-owned facilities and vehicle miles traveled during various air pollution alerts. This plan constitutes the City's effort to protect the public health in the short term when air quality is particularly unhealthful. The City and Regional AQMPs are designed to reduce the likelihood that such episodes will occur in the future.
2. Emissions Banking. The City has approved the filing of a letter of intent to seek federal funds to develop an emission banking system which would facilitate the offset of emissions in the Los Angeles basin.

#### PLAN POLICIES

General Policies - It is the City's policy that:

1. An investigation be made of all possible air mitigation measures.
2. All reasonable air mitigation measures be adopted.
3. An effort be made to abide by all reasonable air pollution regulation requirements.

#### Land Use - Housing

1. Land use patterns that minimize the need for auto travel be adopted.
2. Concentrated development in centers be encouraged.
3. Redevelopment and rehabilitation in older areas be accomplished.
4. All reasonable growth-management measures that could reduce air pollution be investigated and implemented where feasible.

#### Transportation

1. Incremental development of a regional mass transit system be supported.
2. Improvement and expansion of the region-wide bus system be supported and alternative financing mechanisms be investigated.
3. Reasonably feasible changes in existing transportation facilities be supported.
4. Operational improvements for existing traffic flows be supported.
5. Reduction in off-street parking in selected areas by appropriate parking-management techniques be investigated.
6. Incentives for promoting transit ridership efforts be supported and implemented as feasible.



Energy - Environment

1. Efforts to improve energy efficiency in residential uses be supported.
2. Changes in construction and operation of public facilities should be implemented as the feasibility of new energy-saving concepts are demonstrated.
3. City actions which further the development and application of solar energy be continued.
4. City research into improved air quality planning as part of the General Plan be continued.
5. Efforts to minimize air pollution from City facilities be continued.

## IMPLEMENTATION SECTION

This section comprises two parts: A. Programs and B. Monitoring Systems/Implementation Tools.

### A. PROGRAMS

The City's Air Quality Management Plan includes a variety of programs recommended by different City departments. These programs consist both of existing City programs and proposed new programs which may be helpful in reducing air pollution. Each of the candidate programs has received a preliminary evaluation based on cost, effectiveness, political and public support (see Appendix B-2 for details). This methodology became the basis for listing the candidate programs in one of the following categories: Recommended, Rejected, Further Consideration, Contributory and Other Strategies.

The resulting list of City-recommended programs is selective. Many programs for local implementation are already included in the regional AQMP developed by Southern California Association of Governments (SCAG) and the South Coast Air Quality Management District. City program numbers are utilized with the related regional number listed.

In addition to the recommended regional-City programs, a number of programs are identified for rejection.

### I. RECOMMENDED PROGRAMS

#### A. City Programs Needed to Implement Regional AQMP

The following City programs would implement those portions of the Regional AQMP supported by the City of Los Angeles and requiring local implementation. In addition, other regional programs will be implemented by on-going Contributory programs. A description of corresponding regional programs for local implementation appears in Appendix E. City programs are described in Appendix A.

<u>City Number</u>	<u>Mobile Programs</u>	<u>Related SCAG Number</u>
9	Trip Reduction Program	H-13
17	Better Signalization and Progressive Timing of Traffic Signals	H-35
22	Encourage Carpooling and Other Forms of Ridesharing	H-34, H-112
31	Bike Plan and Bicycle Facilities Program	H-23
37	Flexible Work Schedule	H-4
83	Purchase Low-Emission Government Vehicles	H-113
84	Low-Emission Tune-up for Government Vehicles	H-114



B. Programs for Addition and Substitution\*

These measures are effective for reducing emissions. The programs can be utilized to obtain additional emission reductions and/or as a substitution for non-supported regional control strategies requiring local implementation. (See Appendix F, Emission Reduction for City Programs.)

<u>City Number</u>	<u>Mobile Programs</u>	<u>Related SCAG Number</u>
15	Channelization of Traffic	
	<u>Stationary Programs</u>	
1	Concept Los Angeles (On-going) <ul style="list-style-type: none"><li>a. Citywide Plan</li><li>b. Community Plans</li><li>c. Citywide Elements</li><li>d. Zoning Adjustments</li><li>e. Specific Plans</li><li>f. Redevelopment Plans</li><li>g. Regulation of Subdivision</li></ul>	
2	Concept Los Angeles (New Strategies) <ul style="list-style-type: none"><li>a. Growth Incentives for Centers</li><li>b. Reduced Parking Requirements in Centers</li><li>c. Mixed Development in Centers</li><li>d. Cluster Zoning</li><li>e. Urban Infill</li><li>f. Develop Performance Zoning Standards</li></ul>	

II. CONTRIBUTORY PROGRAMS

Programs listed in this category are on-going local activities which provide some air quality benefits. While these programs are being implemented for a variety of reasons (mobility, energy conservation, etc.) their cumulative effect aids in achieving air quality goals.

<u>City Number</u>	<u>Mobile Programs</u>	<u>Related SCAG Number</u>
11	Increased Traffic Regulations	H-74
16	Utilize One-Way Streets to Improve Traffic Flow	
19	Metering to Favor Parking by Short-Term Users Over All-Day Commuters	
21	Strict Enforcement of Additional Parking Restrictions and Traffic Regulation	H-74

<u>City Number</u>	<u>Mobile Programs (cont'd)</u>	<u>Related SCAG Number</u>
24	Pedestrian Facilities	H-23
25	Freeway Approach Programs	
26	Institute Additional Reversible Traffic Lanes	
30	Improved Traffic Flow Through Special Turning Lanes or Exemption of Buses from Turning Restrictions	
36	Vanpooling	
41	Street Improvement Program	
42	Street Maintenance Program	
43	Bus Facilities Improvement Program	
54	Flashing of Traffic Signals	

Stationary Programs

53	Street Lighting System	N-4
61	Solar Hot Water Heaters in Homes of DWP Customers	N-3, N-15
62	Solar Police Station	
64	Solar Fire Station	
65	Solar Energy for City Office Buildings	
66	Optimum Energy House	
67	Solar Low-Income Housing	
68	Solar Swimming Pool	

III. PROGRAMS FOR FURTHER CONSIDERATION

The following programs all have some degree of effectiveness in reducing emissions. However, due to present high cost, a lack of public acceptance, a lack of data and/or a lack of proven technology, these programs are not being recommended for inclusion in the Plan at this time. It is recognized, however, that some of these programs may have to be implemented in the future in order to achieve Federal standards.

<u>City Number</u>	<u>Mobile Programs</u>	<u>Related SCAG Number</u>
5	Downtown People Mover *	H-87
18	Computerized Traffic Control	
32	Expanded Airport Park-and-Ride Facilities	
33	Ground Access Improvements	
34	Palmdale International Airport	
35	Sepulveda Boulevard Tunnel Reconstruction	
38	Parking Management Plan	
<u>Stationary Programs</u>		
44	Require Proper Orientation in New Subdivisions	
45	Use of Trees and Landscaping for the Improvement of Air Quality	

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\* City Council decision pending.



<u>City Number</u>	<u>Stationary Programs (cont'd)</u>	<u>Related SCAG Number</u>
48	Consideration of City Building Code Revisions to Reflect Energy Concerns	
50	New Conservation Lighting Standards	
51	New Lighting Standards	
57	Methane Extraction	
58	Installation of Efficient Air Oxygen Transfer Devices	
63	Solar Electric Power Plant	
69	Solar City Power Plant	
71	Sun Access and Use	
82	Energy Conservation -- Residential Retrofit Inspection Program	N-2

#### IV. STUDIES/PRE-1976 PROGRAMS/DISTRICT REQUIREMENTS

- A. Studies -- Programs that are currently only studies and are not considered Air Quality Control Tactics at this time.

<u>City Number</u>	<u>Mobile Programs</u>	<u>Related SCAG Number</u>
8	Sub-area Traffic Studies	
10	Community Transit Studies	H-76
13	Subregional Traffic Inventory	
14	Computerized Road Records	
23	Alternate Route Planning	
27	Institute Additional Reserved or Preferential Lanes on City Streets	
28	Convert Selected Downtown Streets to Exclusive Bus Use	
29	Institute Bus Preemption of Traffic Signals	
39	Regionwide Parking Strategies	
40	City Transportation Plan	

	<u>Stationary Programs</u>	
46	Actively Encourage Adequate Funding at Both State and Federal Levels for Research and Development of Alternative Energy Sources	
47	Solar Energy Code for City	
52	New Buildings Energy Efficiency	
55	Automatic Light Shutoff	
56	Computerized Power Allocations	
60	Resource Recovery	H-61
70	Consumer Assistance on Solar Information	
74	Development of Low-Emission Fuel-Efficient Automobile and Truck Engines	
75	Development of Low-Pollution Fuels as Substitutes for Natural Gas and Petroleum Distillates	
76	Environmental Review - Interior Controls	

- B. Pre-1976 Program -- Programs that the City had underway prior to 1976 and therefore cannot count for credit with EPA in reducing local air pollution.

<u>City Number</u>	<u>Stationary Programs</u>	<u>Related SCAG Number</u>
49	Heating and Cooling	
59	Refuse Load Consolidation	
72	Vehicle Fuels Reduction Programs	
79	Power Plant Combustion Boiler Modifications	
80	Scattergood Unit 3 Modifications	

- C. District Requirement -- Programs credited to the SCAQMD that are already required by recent District rules.

<u>City Number</u>	<u>Stationary Programs</u>	<u>Related SCAG Number</u>
81	Low-Sulphur Power Plant Fuel	

#### V. REJECTED PROGRAMS

Federal law provides for the rejection of tactics based on supportive data. Findings indicate the following programs can be rejected as ineffective upon analysis or viewed as unreasonable for local implementation. An explanation of the rationalization for program rejection is in Appendix B.

<u>City Number</u>	<u>Mobile Programs</u>	<u>Related SCAG Number</u>
12	Establishment of Car-Free Zones and Closure of Selected Streets to Vehicular Traffic or to Through Traffic	H-58
<u>Stationary Programs</u>		
3	Annexation	
73	Natural Gas Conservation by the Recreation and Parks Department	



## B. MONITORING SYSTEM/IMPLEMENTATION TOOLS

### MONITORING SYSTEM

#### Background

The City's involvement in planning affecting air quality is considerable. At present, many departments and bureaus are involved in one or more activities that relate to air quality planning including: Mayor's Office, City Planning, Engineering, Traffic, Water and Power, Community Redevelopment Agency, and Public Utilities and Transportation. Six programs affecting air quality are currently ongoing: zone adjustments, "201" Wastewater Facilities Planning, "208" Water Quality Planning, Air Quality Management Planning, Regional Transit Development Program, and Transportation System Management. A new major program on a City Energy Management Plan is underway. Parking Management may be undertaken in the near future when Federal funding becomes available.

#### Functions

Given the Federal and State requirements for air quality planning and the numerous ongoing City air quality activities, a City control capacity is necessary. By its action of October 12, 1978, the City Council has given responsibility to the City Planning Department to coordinate the various activities. (CF 75-1435 S-4) In order to develop a Management System for the diverse air quality activities underway and planned in Los Angeles, an Air Quality Committee of the General Plan Advisory Board was created. The organization and responsibilities of this committee are outlined below.

- 1) Membership - City Attorney, City Engineer, City Planning Department, Chief Legislative Analyst, City Administrative Officer, Traffic Department, Bureau of Sanitation, Department of Water and Power, Department of Public Utilities and Transportation, and Office of the Mayor. At such time as it is constituted, the Department of Transportation will be represented.
- 2) Responsibilities - The committee will advise the General Plan Advisory Board and the Director of Planning as to the following:
  - a) Advise the Mayor and Council on policy matters;
  - b) Coordinate internal City activities related to air quality planning;
  - c) Communicate on behalf of the City to other governmental agencies on air quality planning matters;
  - d) Monitor and issue status reports on the implementation of City activities identified as necessary to meet the Clean Air Act standards;
  - e) Recommend changes as necessary, to ensure compliance with all legal responsibilities; and
  - f) Aid in producing and updating the Air Quality Management Plan.
- 3) Products - Air Quality Committee:
  - a) Ask operating departments to submit annual status reports to ensure that all concerned City departments are aware of the impact of their activities on air quality and are making reasonable further progress in implementing any air quality program for which they have responsibility, current air quality activities, and any new programs that are being started.

- b) Aid in the preparation of an annual status report to the Mayor and City Council documenting the "reasonable further progress" being made towards implementing various programs in light of Clean Air Act standards. It will be necessary to show substantial gains in the early years of AQMP implementation.
- c) Aid in the preparation of a Plan update every two years as required by the EPA. This revision will utilize the data from the status reports, supplemented to the extent possible by refinements in local or regional data. The Plan revision will permit programs to be added or dropped in light of a thorough assessment of their feasibility, effectiveness, or other criteria.

## IMPLEMENTATION TOOLS

This section of the report contains a listing and brief description of the major types of implementation methods that are available for the Air Quality Management Plan.

There are a variety of methods or "tools" by which a plan may be implemented. Some of these are quite specific and directly affect City actions; others are more general and are supportive of external actions.

Many ordinances, code provisions, legislative resolutions or executive directives are already in place to provide for direct implementation of certain AQMP measures. Others will have to be enacted or approved to provide positive impact on City operational efforts to achieve AQMP goals. Indirect efforts take the form of beneficial policy statements and positions on matters pertaining to air quality which are beyond the direct control of the City.

The coordinating efforts in the City will involve (1) the City work program; (2) Capital Improvement efforts; (3) Federal and State grant involvement; (4) municipal ordinance provisions; (5) planning controls; (6) private sector cooperation; and (7) and (8) means of financing various efforts. Key considerations in these areas are set forth below.

- (1) **CITY WORK PROGRAM** - While much of the ongoing City work on air quality is being funded by higher levels of government, some of the work involves matching City funds or is completely funded from the municipal budget. Depending on the continued availability of City revenues, work presently being done or recommended to be undertaken by the City will be carried out as part of the ongoing work program of various City agencies.

Each City Department will be asked to make a yearly assessment of the air quality impacts of any new major activity it undertakes. Documentation of activities, which improve air quality, will count toward the local share of the City required future air quality improvements. Such assessments, which may be information already prepared for environmental review, will be documented when possible and submitted to the City Air Quality Sub-committee for consolidation into the annual AQMP status report to the Mayor and Council, indicating the overall City progress toward implementing the Air Quality Management Plan goals.

- (2) **CAPITAL IMPROVEMENT BUDGET** - Each year, the City undertakes major improvement to roads, facilities, and utilities. Planning for these projects is done in the Five-Year Capital Program, which provides a basis for annual capital budgets. During development of the capital budget, projects are carefully evaluated for priority and need to insure coordination among various departments having primary responsibility for such projects. Programs and projects which will have significant impacts on air quality will be funded largely in the Physical Plant portion of the Capital Improvement Program.



In order to insure that future capital programs and budgets are consistent with air quality management efforts, projects having potential air quality impacts must be identified as early as possible in the review process. Moreover, in view of the City's need to show progress towards attainment of Clean Air Act Standards, it is essential that every action the City takes to reduce air pollution is identified and the pollution reduction accounted for in the AQMP reporting process.

In the initial phase of the Capital Improvement budgeting process, each new item that has a potential impact on air quality will continue to have an Initial Study prepared by the department that originates a particular capital project request. If an EIR is ultimately prepared, the estimated impact on air quality will be quantified when possible and submitted as part of that Department's brief annual report on Air Quality. Capital Improvement Projects which improve air quality will therefore help meet City required reductions.

- (3) **FEDERAL/STATE GRANTS** - Los Angeles relies heavily on other levels of government for its funds to carry out air quality programs. Current funding sources for the City include the U.S. Environmental Protection Agency, the Urban Mass Transit Administration, the Federal Highway Administration, the Department of Energy, and the California Department of Transportation. In many cases, these funds pass through the Southern California Association of Governments (SCAG) for contract administration and coordination of regional goals and programs. The recent State constitutional amendment limiting local taxation will increase the City's dependency on financial assistance from other levels of government in its efforts to achieve air quality goals.

In addition to the grants directly related to air quality, an important indirect funding source is the federal program for Housing and Community Development. The funds from this program can be used for various physical and social improvements to existing neighborhoods throughout Los Angeles, thereby reducing the need for distant new fringe area development and commuting.

- (4) **TRANSPORTATION IMPROVEMENT PROGRAM** - The TIP documents the Federal and State funded transportation improvement projects proposed for implementation in the SCAG region over the next four years. The TIP serves as the implementation schedule for the policies, programs and recommendations set forth in the Regional Transportation Plan (RTP). Projects are not endorsed for funding and implementation until they are advanced into the Annual Element.
- (5) **MUNICIPAL ORDINANCE PROVISIONS** - The City's legal provisions for various activities are spelled out in official ordinances making up the Municipal and Administrative Codes. The ordinances that would relate to air quality would be contained in the City's Planning and Zoning Code and the Building Code. It is envisioned that future ordinances will be proposed as new specific air mitigation requirements are detailed after appropriate research.
- (6) **PLANNING CONTROLS** - A great variety of traditional planning controls exist to improve air quality. Among them are the following: (a) Subdivision Review; (b) Zoning Review; (c) Specific Plan Studies; (d) Site Plan Review; (e) General Plan Elements Adoption and (f) EIR Review. Together, these controls provide ways to control and guide the location and timing of future growth in ways that can help mitigate the affects of air pollution.

During the course of amending or updating various General Plan Elements, air quality considerations will be introduced, as necessary, to implement the AQMP. The results of these changes will be determined and the information incorporated into the AQMP reporting process.

- (7) **CONTRACTUAL AGREEMENTS** - A technique to reduce air pollution can be mutually agreed-upon solutions that are beneficial to both the public and private sectors. The City may implement certain administrative actions required in the City AQMP by this method (private rideshare programs, etc.).
- (8) **MUNICIPAL FEES** - Although limitations on taxing power have been imposed by the recent State constitutional amendment, the City can recover the costs of substitute services through fees. To the extent possible fee structures will be reviewed to provide both funding mechanisms and incentives to achieve air quality goals.



C. IMPLEMENTATION SCHEDULE FOR PROGRAMS \*  
Requiring City Implementation

PROJECT NAME	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
LAND USE													
1. Concept L.A. (existing)	on-going effort												
2. Concept L.A. (new)		R	O & A	I									
5. Downtown People Mover	R & A		E	C		I							
9. Trip Reduction Program			I										
11. Increased Traffic Regulation	on-going effort												
15. Traffic Channelization	on-going effort												
16. One-Way Streets	on-going effort												
17. Continue Better Signalization & Progressive Timing of Signals	on-going effort												
18. Computerized Traffic Control	R	E	C	I									
20. Fringe Parking For HOV	on-going effort												

Legend

A - Approval  
R - Research/Study  
O - Ordinance Development  
I - Implementation  
C - Construction  
E - Engineering/Design

# CITY IMPLEMENTATION SCHEDULE

PROJECT NAME	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
22. Carpooling/Ride Sharing	on-going effort												
24. Pedestrian Facilities	on-going effort												
25. Freeway Approach Programs	on-going effort												
26. Reversible Lanes	on-going effort												
30. Bus Turning Lanes	on-going effort												
31. Bicycle Plan	on-going effort												
32. Airport Park & Ride				E									
33. Ground Access Improvement	A	E			I				I				
34. Palmdale Int'l. Airport				E									
35. Sepulveda Blvd Tunnel	A	E			I					I			
36. Vanpooling	on-going effort												
37. Work Schedule Adjustments		R			I								



# CITY IMPLEMENTATION SCHEDULE

PROJECT NAME	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
38. Parking Management Plan		E	I										
41. Street Improvement Program													
42. Street Maintenance Prog.													
44. Lot Orientation													
47. Solar Energy Code													
48. Building Code Revision													
50. Lighting Standards (Exterior)													
51. Lighting Standards (Interior)													
53. Street Lighting													
57. Methane Extraction													
58. Air Transfer Devices													
61. Solar Hot Water Heaters													

## CITY IMPLEMENTATION SCHEDULE

PROJECT NAME	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
62. Solar Police Station					on-going effort								
63. Solar Power Plant		E & C											
64. Solar Fire Station					on-going effort								
65. Solar Office Buildings					on-going effort								
66. Optimum Energy House					on-going effort								
67. Solar Low-Income Housing					on-going effort								
68. Solar Swimming Pool					on-going effort								
69. Solar City Power Plant	I												
71. Sun Access & Use		A		I									
82. Energy Conservation by Residential Retrofit (Inspection)		STATE LAW				I							
83. Purchase Low-Emission Government Vehicles					on-going effort								
84. Low-Emissions Tune-up for Government Vehicles					on-going effort								



## APPENDIX A: DESCRIPTION OF CITY PROGRAMS EVALUATED

LAND USE

1. Continue to implement Concept Los Angeles (City Planning Department - ongoing)  
Adopted in 1974, this long-range design for Los Angeles is a part of the City's General Plan. Its key recommendations regarding air quality are to concentrate new development into urban centers and to link these centers with improved mass transit systems. This urban form permits less reliance on the automobile for transit and a greater incentive for public transit because of greater density in centers. Employment centers, education, entertainment and residences would all be located closer together in centers, thereby minimizing travel requirements. Transportation within centers would be possible on elevated pedways and by internal public transit systems. Zone rollbacks outside of centers would encourage the future development of high-density areas. The Concept Plan is being implemented through the adoption of the City's various Community and Technical Plans. Modeling of 1987 concentrated growth patterns versus dispersed development patterns indicates projected VMT-related emissions reductions of between one and two percent.
- a. Citywide Plan This document, adopted in 1974, is the 20-year long-range plan to guide overall development in the City. A greater level of detail is provided than in the Concept Plan. Relevant policies related to air quality include:
  - The City's highway and freeway system be improved as a major component of the City's integrated transportation system. Better use of the highways and freeways is to be achieved through advanced traffic control systems and exclusive lanes for buses and car pools.
  - Within the core of principal centers, pedestrian and non-pedestrian traffic be separated.
  - Stringent legislation be advocated to regulate air pollution produced by motor vehicles.
  - Energy systems be considered that will minimize pollution from all publicly owned vehicles.
  - Environmental quality be given major consideration in zone change, subdivision, conditional use, and other land development actions.
  - City agencies adhere to the standards of the California Regional Water Quality Control Board, Los Angeles Region, and the South Coast Air Quality Management District.

Air quality-related programs adopted in the Citywide Plan list the following actions:

- Establish industrial performance standards dealing with air quality to be used in the consideration of applications for zone changes and conditional uses.
- Experimenting with new transit routing alignments to reduce transfers and encourage patronage.

- Seek immediate funding for additional bus service between suburbs and centers to encourage the use of buses for daily activities and to decrease the need for long distance commuter travel.
- b. Community Plans The 35 separate community plans that cover the City of Los Angeles in detail are currently being adopted or implemented. Twenty-seven plans are adopted and seven of these have implementation reports completed. The remaining plans are either awaiting approval by City Council or are being updated. Within all community plans are certain programs related to air quality:
- Development in each district is to be coordinated with other parts of the City reinforcing the Centers Concept. Growth will be controlled, thereby mitigating many adverse environmental impacts, including air pollution.
  - Reduce the zoning capacity and conserve open space; examples include population capacity reductions from 370,000 to 236,000 in the Wilshire Plan and population capacity reductions of 378,000 to 211,000 in the Southeast Plan.
  - Encourage the expansion and improvement of public transportation services including rail transit, mini-buses and car pooling.
  - Incorporate the Highways and Freeways Element in each district plan.
  - Classify industrial land under the MR Zone to encourage research and development-type industries and more open space.
- c. General Plan Elements (City Planning - Ongoing) Two elements of the City's General Plan relate directly to air quality:

Open Space Plan Adopted in 1973, the Plan includes the following references to air quality:

- A study to determine the impact of development on the life systems of ecologically important areas should be prepared. (Special attention should be given to determine the effect of development in the mountains on regional air quality.)
- Open areas which preserve or protect environmental quality or the ecological balance should be considered open space.

Conservation Plan Adopted in 1973, the Plan includes the following references to air quality:

- Urge the Congress and the Legislature to require the sale of low polluting automotive fuels and engines.
- Seek the extension and improvement of mass transportation facilities where air quality improvement can be projected.
- Seek immediate funding for additional buses as an interim measure until construction on a mass rapid transit system can begin.



- Seek funding for the construction of peripheral parking facilities to serve high-intensity Centers.
- Encourage the implementation of a work week which will disperse peak hour concentration of traffic.
- Encourage the planting and eventually require the use of those plant materials for freeway and street beautification found to be effective in absorbing air pollutants.
- Urge continuation of feasibility studies on completely switching present fuel utilization: automobiles to utilize gaseous fuels and industries and power plants to burn non-leaded gasoline.
- Revise zoning and building code provisions to include performance standards dealing with air quality.
- Require new residential or commercial development to meet these performance standards or emissions.
- Revise building codes to require better insulation in public and private structures, careful attention to sunlight orientation, and better control of internal heat sources.
- Establish an advisory committee composed of architects, building contractors, Department of Building and Safety personnel and utility personnel, both public and private, for the purpose of determining standards of energy utilization.
- Institute a study program to determine the maximum energy level for each community area, similar to maximum density or commercial/industrial floor space concepts.
- Continue studies on the effect Daylight Savings Time has on energy usage and air pollution during summer months.
- Consider an ordinance reducing the use of lighting within high-rise buildings for the purpose of conserving the amount of energy required to cool office buildings.
- Study the feasibility of applying controls such as Conditional Use on high-rise office and residential developments or other large-scale projects.
- Consider limiting the amount of energy used for advertising billboards and signs.
- Seek legislation to amend Air Pollution Control District rules to eliminate the concept that regulations apply to "units", not to all the machinery on one site (i.e. stationary source of emissions).
- Conduct a study of land use to determine effects of development on air quality.

- Seek funding to develop air quality simulation models which would relate population growth, land use, industrial activity, pollution from vehicular and stationary sources, circulation patterns, and air movement.
  - Promote studies to determine the proper mix of measures to achieve air quality standards; such measures should contain a balance of integrated programs.
  - Encourage the use of bicycles for transportation purposes as well as recreational use by providing safe bikeways with convenient and secure bicycle parking facilities at major buildings.
- d. Zoning Adjustments The City presently has zoning capacity far in excess of the 1990 population projection. The City has been reducing the excess zoning by the gradual implementation of zoning rollbacks consistent with adopted community plans. The goal is to achieve consistency between community and concept plan designations and zoning.
- The goal of a maximum zoning capacity of about 4.1 million, down from a theoretical maximum of 10 million in 1972, could help redirect excess growth away from fringe areas and consequently reduce air pollution. Certain rollbacks would also reduce vehicle-miles traveled and offer incentives to develop a mass transit system by encouraging the development of high-density centers. A more rational land use pattern could have a major impact on reducing the growth of future air pollution.
- e. Specific Plans Certain localized areas within a Community Plan require special planning studies because of unique problems such as traffic or density. At present, the City has completed work on three specific plans but work is anticipated in another 25 target areas. Specific plans provide detailed standards and guidelines in the form of ordinances which can be used to implement air quality programs.
- f. Redevelopment Plans Redevelopment plans provide one of the means for the implementation of the centers concept through revitalization efforts. Such plans have been adopted for the CBD, Beacon Street in San Pedro, and the Hoover area adjoining the University of Southern California (three of the Centers within the first stage of a 20-year Citywide Plan). Other redevelopment plans are in preparation for North Hollywood and the Chinatown area.
- g. Regulation of Subdivisions State Law requires that subdivisions be in conformity with the General Plan. Control of development utilizing provisions of the Subdivision Map Act is an ongoing planning process that helps implement the General Plan.

2. Concept Los Angeles (City Planning - new strategies)

- a. Growth Incentives for Centers The City can encourage the development of Centers by a variety of positive actions that will help encourage the use of public transit in Centers and reduce vehicle miles traveled because of greater densities. Among these measures are: (1) use of various funds such as Housing and Community Development Grants and Urban Development Action Grants to provide expanded public services and facilities to properly serve future centers, (2) use of eminent domain to acquire key property in centers to aid their development, and (3) police powers to regulate land development in centers, including minimum density requirements and density bonuses.
- b. Reduced Parking Requirements in Centers The City presently has lower parking requirements in the Central City than elsewhere. This approach could be expanded to other Centers where existing or proposed public transit services were adequate. Reduced parking would allow more compact development and provide for more productive use of the land.
- c. Mixed Development in Centers The City should consider encouraging mixed land uses in Centers as an incentive for more compact projects. By permitting residential, commercial and even industrial uses to be combined subject to appropriate guidelines in the Specific Plan, some reduction in vehicle miles traveled, and numbers of trips may be accomplished.
- d. Cluster Zoning This concept applied in urban areas permits greater concentration of open space in developments. On a sufficiently large scale and combined with multiple use provisions, cluster zoning could be a useful mitigation strategy
- e. Urban Infill The State Plan encourages new development in inner-City areas first, infill of suburban areas second and fringe development adjacent to urban areas third. This hierarchy clearly reduces travel requirements and helps existing and planned urban transit improvements which will reduce future air pollution. City housing and Community Development Funds are available to help implement this program.
- f. Develop Performance Zoning Standards which help mitigate exposure of sensitive groups to high levels of air pollution. Determine what types of buildings such as schools, parks, hospitals and residential units should be limited within a certain distance from major sources of air pollution (mobile and stationary) in order to reduce unnecessary exposure to air pollution by the young, the elderly and other susceptible groups.

3. Annexation (City Planning - new) Cities can annex County land which it is believed may be developed and then restrict or encourage growth. They may also refuse to annex land intended for development and thereby deny services to developers unable to obtain them from County or special utilities districts. Additionally, as City zoning and permit standards in some instances are more stringent than those of the County, annexation can be seen as a method for preventing undesirable kinds of growth. The potential impact of the County's plans and of the Local Agency Formation Commission's influence on contiguous unincorporated land should be thoroughly explored in the context of growth management.



## CIRCULATION

4. Regional Core Rapid Transit System (Southern California Rapid Transit District - new) SCRTD is analyzing eleven alternative methods of providing rapid transit service in a corridor between the Los Angeles Central Business District and North Hollywood via Wilshire Boulevard. (City only has peripheral control over implementation.)
5. Downtown People Mover (City/Community Redevelopment Agency - new) The CRA has completed a preliminary engineering and environmental analysis of an elevated, automated transit system operating on its own guideway between Union Station and the Convention Center for the City of Los Angeles.
6. Freeway Transit (California Department of Transportation - new) Caltrans has proposed a freeway transit system that (1) provides a regional rapid transit system consisting of buses operating on existing and proposed freeways with stops at stations adjacent to the freeways, (2) facilitates free-flow (35 m.p.h. average speed) operation of high-occupancy vehicles (HOV's) on the freeway system by metering other traffic, and (3) provides physically separate additional HOV lanes on seriously congested freeways. (City only has peripheral control over implementation.)
7. Transportation Systems Management - (Southern California Rapid Transit District - ongoing) SCRTD is continuing to plan and implement a wide range of low-capital cost, near-term actions to improve efficiency and productivity of existing transit equipment and facilities. (City only has peripheral control over implementation.)
8. Subarea Traffic Studies (Department of Transportation - study) Two or more corridors, subareas and/or locations will be selected from those deficiencies identified in the previous OWP subregional transportation studies. Detailed traffic data will be collected and analyzed, and various alternatives evaluated to determine the appropriate transportation systems measures. Specific recommendations for improvement will be made. The actual tasks will depend on the locations and problems selected for study, but will generally be as follows:
  - Assemble data on existing and future traffic volumes, both vehicular and pedestrian; collect data as required to fill data voids.
  - Assemble data on roadway geometrics, signing, traffic signal operation, etc.
  - Assemble data on traffic accident rates.
  - Determine current transit routes and patronage.
  - Determine nature and extent of existing and future transportation deficiencies.
  - Analyze various TSM measures and discuss their potential effectiveness in relieving the various deficiencies.
  - Prepare a recommended package of TSM treatments.
  - Review long-range travel forecasts and determine future travel needs.
  - Discuss concepts and plans to accommodate future growth.

9. Trip Reduction Program (Mayor's Office, Department of Transportation - new)

To help carry out the regional program (H-13) goal of maintaining average daily trip frequency at present levels, the City will participate in a media campaign stressing the air quality benefits of limiting unnecessary vehicle trips.

10. Community Transit Studies Transportation and Community Development - study  
In conjunction with other agencies, the Department of Transportation will:

- a. Prepare an analysis of the SCRTD Minibus Report as related to the City of Los Angeles community planning process, including land use and other general plan elements.
- b. Develop a short-range community transportation plan which incorporates SCRTD planning with private and publicly funded paratransit services.

11. Increased Traffic Regulation (Department of Transportation, Police Department - ongoing)

- a. Expanding the Elimination of On-Street Parking, Especially During Peak Periods In the City of Los Angeles, there are more than 11,700 curb-miles (both sides of streets) of surface streets. It is estimated that during off-peak hours, this converts to about 1.73 million parking spaces available along the curbs, while during the peak periods, it is estimated that as much as 1.52 million equivalent parking spaces are still available on the streets (mostly on local streets).

Parking restriction is one of the most important actions available to the Department of Traffic to increase the capacity of an existing roadway without requiring major physical alternations. It is estimated that about half to three-quarters of all curb-miles of Primary and Minor Arterials are designated with parking restrictions, during off-peak and peak periods, respectively.

- b. Restrictions on Downtown Truck Delivery During Peak Hours In Downtown and other high-activity centers, such as Hollywood and Westwood, truck traffic (includes truck and other vehicles but not buses or cars) represent about 5 to 8 percent of daily total vehicles. However, in the peak hour, truck traffic represents only 3 to 6 percent of the total peak-hour vehicles. The truck volumes, during peak hour, represents between two-thirds and three-fourths of peak-truck traffic, which does coincide with peak-hour traffic.

Not many off-street loading and unloading facilities exist in Downtown; some exist in other activity centers. However, on-street loading zones are provided where off-street facilities do not exist. Currently in Downtown, a sign which reads "No Parking, 9 a.m. to 4 p.m.," is placed along street curbs and serves the function of reserving curbs as commercial loading/unloading zones. Loading and unloading along Downtown streets are prohibited during the peak periods but still occur in Downtown and other activity centers.



- c. Increase Strictness of Reserved Transit Rights-of-Way It is proposed to increase the already strict enforcement of bus zones throughout the City. Reportedly, violations on the preferential ramps have run as much as 50 percent, but enforcement has been at the same level as on the rest of the freeway. The contra-flow bus lane on Spring Street is well enforced.

12. Establishment of Car-Free Zones and Closure of Selected Streets to Vehicular Traffic or to Through Traffic (Department of Transportation- ongoing) There have been temporary conditions in which streets have been closed due to parades or other activities. There are some examples of City streets which have been permanently vacated. One of more recent closures of a City Street is Hoover Street between Exposition Boulevard and Jefferson Boulevard, adjacent to the University of Southern California. There are no "normal" requirements for street vacation (closure to through traffic). Requirements are individually established in accordance with the scope of the vacation proceeding, the nature of the associated proposals, and the various needs foreseen.

There have been some studies of the Downtown area, performed by both private consultants and by City agencies, which have suggested limited application of car-free zones on certain streets through limiting access to only transit vehicles (buses) or by converting roadways to pedestrian malls.

The Regional AQMP proposes 26 auto-free centers. Eight of these would probably be in Los Angeles City. Of these, the City staff believes only four are remotely realistic.

13. Subregional Traffic Inventory (Department of Transportation- study) An accurate, up-to-date traffic data base for the City is required by City agencies for planning purposes, as well as by SCAG in preparation of the RTP and TIP. Traffic flow maps have been prepared City-wide, and the Traffic Department annually counts traffic crossing 15 selected screen lines throughout the City. These data need to be updated on a regular basis in order to determine trends and project future volumes. It is proposed that one-third of the traffic flow maps be updated each year, and the screen lines will be counted and a report prepared showing updated volumes and trends. The following specific tasks will be performed.
- Collect data on existing traffic volumes and update at least one-third of the City-wide flow maps.
  - Publish a revised book of City-wide flow maps and distribute to various planning agencies and departments.
  - Collect and analyze traffic counts for the 15 screen line locations City-wide.
  - Prepare a report showing current screen line volumes and growth trends.
14. Computerized Road Records (Department of Traffic- study) Program maintains computerized road records which include an inventory of all streets including dimensions, roadway conditions, traffic counts and accident records. This program facilitates the location and correction of impediments to traffic flow. This computer program enables other traffic department measures to improve traffic flow which reduces pollution.



15. Channelization of Traffic (Department of Transportation - ongoing) An annual budget item for the continuous upgrading of traffic channelization and intersection improvements. A portion of this program is implemented concurrently with the street improvement program.

Currently, there are 4,331 miles of local streets, and practically none have any channelization. There are 1,000 miles of Primary Arterial and 370 miles of Minor Arterial within Los Angeles, 60 percent of which are channelized with only double centerline. Furthermore, there are 9,828 approaches to intersections channelized with left- and right-turn lanes.

This program results in improved traffic flow and reduced pollution.

16. Utilize One-Way Streets to Improve Traffic Flow (Department of Transportation - ongoing) Within the City one-way streets are utilized in this ongoing program principally to improve traffic flow in the Central Business District (CBD). Many of the arterials within the City are sufficiently wide so that one-way streets are not warranted to improve traffic flow outside of the CBD. Thus, almost half of the 94 miles of one-way streets in Los Angeles are within the Central (Traffic) District; and about one-fourth of the total are in the Southern District. It was determined in the latest survey that there are about 200 streets which are utilized as one-way streets. The traffic flow improvements from this program result in air pollution reductions.

17. Better Signalization and Progressive Timing of Traffic Signals (Department of Transportation - ongoing) The Federal Aid Urban program helps to finance the continuous improvement of signalization and signal coordination. In order to operate the signals effectively, 30 separate subarea signal systems have been established.

Surveillance of traffic signal operation is accomplished primarily by Traffic Department personnel involved with the inspection and maintenance of traffic signals on a cyclical basis. By increasing the frequency of traffic signal inspection and maintenance, signal malfunctions involving timing and coordination could be identified sooner. This would result in better progression and decreased energy consumption and air pollution.

It has been determined that about 3,000 signals need to be interconnected. Currently, 2,530 signals in the various systems are interconnected. About one-half of all intersections are "directly" interconnected by Departmental cables. The interconnected systems for the additional 500 signalized intersections have already been programmed by the Department of Traffic. Improvements in traffic flow will reduce air pollution.

18. Computerized Traffic Control (Department of Transportation - new) The Research Section has conducted studies of improved methods of traffic signal control with objectives of reducing traffic delays, vehicle emissions and fuel consumption. Findings of the study indicated that, through the installation of improved signal systems, estimated reductions could be achieved in vehicle delay of 14 percent, in bus passenger delay of 11 percent, in vehicle emissions of 7 to 8 percent, and in fuel consumption of 5 to 6 percent. It was concluded that the benefits of the improved systems would result in economic savings exceeding cost by a factor of five.

19. Metering to Favor Parking by Short-Term Users Over All-Day Commuters (Department of Transportation - ongoing) Present practice is to provide for a one-or-two-hour parking limitation. Thus, on-street parking favors short-term users. Less than an hour's worth of parking is provided at some public and quasi-public buildings, such as post offices, banks, public utilities, and so on.

Parking meter zones are established primarily to improve curb parking turnover and to aid enforcement of parking time limitations. Because of the self-enforcing features of a meter zone, more liberal use may be made of parking limitations less than an hour.

Ideally, each parking space in core areas should maximize the convenience it affords land uses by serving as many parkers as possible. This implies maximum development of short-term parking in core areas, particularly in the CBD. Thus, favoring short-term parking emerges from normal economic processes. The design and rate schedules also encourage short-term parking in core garages, while facilities for all-day parking are usually located on the fringes of the CBD.

20. Providing Fringe Parking to Facilitate Transfer to Transit and Other High-Occupancy Vehicles (Mayor and City Council - ongoing) PARK-AND-RIDE and PARK-AND-POOL Lots are operating in 37 locations in the Los Angeles basin. The 21 park-and-ride lots are operated by transit districts (11 of them by the Southern California Rapid Transit District). Their goal is to facilitate and encourage transit use, and over 6,500 passengers per day are presently using them. The 16 park-and-pool lots have been implemented by Caltrans at a minimum cost through donations of unused parking spaces from public institutions, the private sector and religious organizations. Three hundred seventy-five (375) spaces are thus made available to car pool members. City property is being made available for use as parking for these programs. Additional City property could be utilized in the future.

The outlying parking facilities can aid in reducing parking requirements within the CBD, enabling this valuable land to be used for other purposes. Thus, they may serve to achieve an equilibrium between Downtown parking supply and demand without discouraging Downtown activity or travel.

21. Strict Enforcement of Additional Parking Restrictions and Traffic Regulations as an ongoing component of efforts to improve traffic flow (Police Department - ongoing) Enforcement of parking restrictions and traffic regulations has been strict and widespread for many years in Los Angeles. This practice of strict enforcement should be expanded with the addition of new parking restrictions and traffic regulations required by air quality related tactics.
22. Encourage Carpooling and Other Forms of Ride Sharing (Data Service Bureau - ongoing) Carpooling is being actively promoted by the City as a key measure to achieve a reduction in vehicle-miles traveled (VMT) throughout the region. The carpool action program consists of a regionwide computer matching system, public information and coordination to promote the use of carpools, and a program of incentives. Commuter Computer Corporation has established a matching file of 90,000 persons who are currently willing to carpool on a regular basis. It is estimated that about 12,000 individuals have so far utilized the matching service to establish their carpools. In addition, another 58,000 persons are currently listed in the matching file as individuals who would be willing to carpool in cases of emergency (e.g., smog alert or a bus strike).



The Department of Traffic has assisted Commuter Computer efforts through the design of a statistical survey to evaluate the carpooling effort, through providing computer programming services, and through the use of programs for computer-addressed mailing by Commuter Computer's marketing group.

- The City of Los Angeles has given its endorsement to the program. City employees have been sent information encouraging information and sign up kiosks are provided in various municipal locations to facilitate interest.
- While the exact number of City employees switching to commuter computer is unknown, regionally, over 11,540 persons have been placed in carpools and vanpools and 5,650 more are being placed each year.
- The program can be credited with saving 2.4 million gallons of fuel per year and reducing the VMT by 41.5 million per year regionally.
- Benefit programs have been developed by some public and private sector employers to promote the use of high-occupancy vehicles. They consist primarily of preferential parking treatment (location and price) for high-occupancy vehicles. The City of Los Angeles provides free parking in municipal garages for carpools and also gives priority "location" for carpools among various city parking lots. Carpool action programs are constantly referred to in the planned activities in the management for the use of the private automobile. Increased participation from both the public and private sector are always sought as well as expanding supportive activities by the City for public transit and private carriers (e.g., taxis, minibus, paratransit, private vanpools, etc.)

23. Alternate Route Planning (Department of Transportation) The Freeway Alternate Program is a partially implemented joint City-State project to select routes to be used as detours during freeway closures.

Plans for installation and modifications of traffic control devices were developed to increase the capacities of the detour routes. At the end of the 1976-77 Fiscal Year, the Department of Traffic had reviewed alternate route maps for all major freeways in Los Angeles prepared by Caltrans. In addition to reviewing and commenting on the maps, the Department of Traffic personnel responded to 143 freeway incidents both during and after normal working hours during the 1975-76 Fiscal Year. This program has been deleted from the Traffic Department's budget.

24. Pedestrian Facilities (Bureau of Engineering - ongoing) The following are intended to encourage foot travel and reduce vehicle travel and, additionally, to separate pedestrian and vehicular traffic. The results will be reduced VMT and reduced congestion and consequent reduced emissions.

- a. Pedway Program to Provide Stairways and Bridges at Selected Locations  
This on-going program under 5-year Capital Projects Program will provide stairways and bridges across flood control channels, providing residents, including school children, with shorter walking routes to and from destinations leading to less dependency on the automobile. Also pedestrian bridges to replace mid-block crossings at grade in dense urban areas can aid in vehicular traffic movement and consequently help to reduce air pollution stemming from vehicle exhaust.



- b. Provision of Pedestrian Malls and Other Means of Separating Pedestrian and Vehicular Traffic to be Expanded There are many malls within the City that have been developed as part of new shopping facilities. However, none were developed specifically as pedestrian malls to improve existing vehicular or pedestrian flow. In Los Angeles, there are currently more than 100 underpasses and overpasses which specifically accommodate safe pedestrian crossing of major arterial streets. Most of these (about 80) are pedestrian underpasses provided adjacent to schools.

There are several pedestrians overpasses throughout the City, including those at:

- . City Hall
- . City Hall Mall
- . Occidental Center
- . Bunker Hill, and
- . Century City.

25. Freeway Approach Programs (Department of Transportation - ongoing)

- a. Freeway Access Metering The freeway ramp metering program by Caltrans has been underway for ten years and by 1979 will have included more than 500 ramps. The Traffic Department helps to minimize adverse impacts on surface street operations by participating in the planning, implementation, and monitoring of the various ramp control projects.
- b. HOV Ramp Bypasses Caltrans plans for 150 HOV ramp bypasses to be operational by 1979. The Traffic Department has provided bus and carpool preferential treatment on surface street approaches to many of the ramps with HOV bypass lanes. This helps provide for additional time savings and acts as another incentive to develop carpools.

26. Institute Additional Reversible Traffic Lanes (Department of Transportation - ongoing) This proposed project will utilize a technique pioneered in Los Angeles. Reversible traffic lanes were first implemented in Los Angeles in 1935, the first city in the U.S. to use this technique to relieve traffic congestion. Today, reversible traffic lanes are used only to a minor extent on some streets in Los Angeles. The City arterials are sufficiently wide and have generally "balanced" traffic flow so that reversible traffic lanes are often not warranted.

In total, there are only 3.1 miles of reversible lanes on four separate streets. These streets include: Highland Avenue, Hill Street, Olive Street and 8th Street. The longest segment is the 1.38-mile stretch of Highland Avenue from Sunset Boulevard to the Hollywood Freeway.

Highland Avenue is the only street which is striped into an unequal number of lanes that accommodate the southbound traffic during the morning peak period, then through the use of cones and signing, an additional lane is provided for northbound traffic in the evening peak period. The other three streets are evenly striped, and only during the peak period are the streets "coned" to give an additional lane/lanes in the heavy direction of traffic. Improvements in traffic flow reduce vehicle emissions.

27. Institute Additional Reserved or Preferential Lanes on City Streets (Department of Transportation - study) In May, 1974, a 1.4-mile segment of Spring Street was opened as a bus contra-flow lane for buses on Spring Street was enacted by City Ordinance and is currently still operational. It now carries about 1,000 buses per day, or about 50 percent of all the northbound buses which leave the CBD. One proposal would institute a contra-flow bus lane on Glendale Boulevard between First Street and the Glendale Freeway. (See also City Program No. 41b.)

Additional preferential treatments on some surface streets utilizing improved median shoulders, contra-flow lanes, and preferential lanes for buses will be studied jointly by SCRTD and the Department of Traffic during the Regional Transit Development Program. The Department of Traffic will also coordinate any similar projects developed by Caltrans on freeways.

28. Convert Selected Downtown Streets to Exclusive Bus Use (Department of Transportation, Bureau of Engineering - study) During future studies of the four elements of the Regional Transit Development program, the Department of Traffic will investigate the appropriateness of exclusive bus use as well as other preferential treatments of CBD streets.

This treatment has not been used in the City of Los Angeles. However, previous studies of Downtown have suggested several Downtown streets for exclusive bus use, including Broadway, Hill Streets and 7th Street.

29. Institute Bus Preemption of Traffic Signals (Department of Transportation - study) Currently there is no bus preemption of traffic signals in Los Angeles. Sperry Systems Management Division of the Sperry Rand Corporation evaluated a bus preemption system for the Downtown area and Wilshire Boulevard. The study concluded that with more than 30 buses per hour (in one direction) on Wilshire Boulevard, the system of bus preemption may be economically feasible.

The main types of signal preemption which exist in the City are those at railroad crossings and at fire stations. In 1976, there were 169 railroad preemptions, 24 fire station preemptions, and 7 other preemptions.

30. Improved Traffic Flow through Special Turning Lanes or Exemption of Buses from Turning Restrictions (Department of Transportation - ongoing).

In the AM peak period, there are about 100 intersections which are specifically signed for turning restrictions, while in the PM peak period, the total number increases to about 150 intersections.

The restrictions are implemented through placement of permanent turn restriction signs at intersections. Buses are exempted from turning restrictions at all of these locations. At all other times, except during the peak periods, left turns are allowed at most of these intersections.

31. Bike Plan and Bicycle Facilities Program (Bureau of Engineering - ongoing) Bicycle storage lockers are essential for increasing bicycle usage. Storage should be provided at locations such as major bus stops and/or bus terminals such as park-and-ride lots. Currently, there are no such designated bicycle storage facilities within Los Angeles. There are bike racks provided at many schools, universities, and major shopping centers. Secure and convenient storage for bicycles is proposed as part of the Bicycle Plan element for the City's General Plan.



Efforts to expand the existing bicycle program from primarily recreational usage to potential commuter use (e.g. bike path connectors to transit intercepts such as the Venice Transit Center) and for short trips (e.g. neighborhood shopping centers) will be developed.

The City adopted a Bicycle Plan jointly developed by Engineering, Traffic, and City Planning in 1977. Currently, 56 projects are included in the CIP totaling \$11.6 million. Present system development is 10 street miles with 15 more planned. Routes also exist within various parks. Funding comes from Federal, State and County sources.

The City has started to impose suitable conditions on new developments based on requirements in the Bicycle Plan through the subdivision review process.

32. Expanded Airport Park-and-Ride Facilities (Airport Department- new) Remote Terminals - The airport presently operates a fleet of buses taking commuters from the Van Nuys park-and-ride station to the airport. The program has been in effect for 3½ years and will be expanded in the future as demand continues to increase.
33. Ground Access Improvements (Airport Department- new) This project would double-deck the World Way airport loop, reducing traffic congestion around the airport terminal area. Plans are underway to expand several surrounding airport parking lots and to improve the efficiency of bus service to LAX. It will reduce the need to drive directly to terminals.
34. Palmdale International Airport (Airport Department- new) This airport site is located in the Antelope Valley and will be developed as a reliever airport for LAX. When LAX reaches its capacity in approximately 1984, Palmdale will develop to handle some of the excess passenger volume. Palmdale is expected to handle 12 million annual passengers in the 1990's. This will result in a reduction in air pollution in the Los Angeles Basin according to a report prepared by Olson Laboratory for submission to the Air Resources Board as part of the application for an Air Quality Certificate.
35. Sepulveda Boulevard Tunnel Reconstruction (Airport Department- new) Reconstruction of the Sepulveda Boulevard Tunnel will enable jumbo jets to use runways closer to the terminal area, reducing the amount of aircraft taxiing between runways and terminals.
36. Vanpooling (Mayor and Council- ongoing) By action of City Council, the City established an employee VanPool Program in June 1975. Six 12-passenger vans have been purchased by the City. Purchase and operation of the vans is self-supporting through fares paid by participating employees. One employee acts as driver and coordinator in exchange for free transportation. The van is available to employees to use for personal business for a mileage payment. Preferential parking is given to the vanpools. The City of Los Angeles' own vanpool program solicited about 600 applicants for its vanpool. Only one van and 11 individuals are currently participating in this program.



37. Flexible Work Schedule (City Administrative Officer- new) The Regional AQMP has identified a goal for local employees to shift to a flexible work schedule. The City will undertake a survey to determine where such a schedule could be established within municipal agencies. Care must be taken to continue to provide the basic level of public service required and to work within the collective bargaining process. Where feasible, voluntary flexible work schedules will be offered to City employees where the above criterion can be met by 1982. To the extent that the survey indicates a benefit beyond the regional goal, the City may decide to implement a greater work force change as a substitute tactic.
38. Parking Management Plan (Mayor's Office and various City departments- new) The City Parking Management Staff completed this plan in 1977 and it is currently under consideration by the City Council. The Plan was devised by two joint groups: 1) a steering Committee, comprising private sector expertise in the areas of parking, transportation, and land use, and representatives of the Mayor and the Chairpersons of the key City Council Committees, and 2) a Task Force of City Department Heads. The Mayor's Office assisted in coordinating the development of the plan. A grant application for preparation of administrative procedures and ordinances is pending funding by the Federal government.
  - a. Reduce Code-required Parking for Commercial and Industrial Activities Firms which optionally choose to implement High Occupancy Vehicle parking on-site should be eligible for reduced code parking. The proposal could reduce VMT and thereby reduce air pollution.
  - b. Allow Neighboring Businesses to Share Parking Facilities to meet code requirements The proposal will broaden the benefits of reduced VMT by reducing costs of providing parking.
  - c. Establish a Position of "Transportation Services Coordinator" within the Department of Transportation The proposal will facilitate access to and utilization of alternatives to the individually occupied automobile thereby reducing VMT.
  - d. Employee Incentive Parking Proposal In return for commercial and industrial concerns implementing optional programs to reduce employee use of single-occupant autos, firms should be entitled to reduced code parking. The proposal would correlate reductions in code required parking to the effectiveness of various incentives in terms of reducing use of the singly occupied auto thereby reducing VMT.
  - e. Institute incentive program to encourage City employees to use alternatives to the singly occupied auto The proposal would combine parking fee and supply changes with modest financial incentives for employees choosing alternatives to the singly occupied auto.
  - f. Substitution of Park-and-Ride for Code-Required Parking Allow commercial and industrial activities to substitute spaces in remote Park-and-Ride facilities for on-site parking required by code. The proposal would substitute bus or other high-occupancy vehicles for portion of daily work journey thereby reducing VMT.
  - g. Parking Facilities Design Adopt parking facility design standards which minimize vehicle running and idling time. The proposal would reduce CO emissions.

39. Citywide Parking Strategies (Planning Department - study) The following citywide parking strategies, are somewhat related to item 38 above, but are still in a draft stage. They are proposed for consideration only after a thorough evaluation of their local and regional economic and land use consequences is completed. These strategies depend upon governmental regulation of parking to achieve desired environmental and land use results. In this way they are clearly different from the Parking Management Plan, which has as a major organizing principal utilizing private market forces, governmental regulatory incentives, and voluntary cooperation in parking management.

The objective of these strategies is to reduce parking in core areas of centers and to encourage use of public transit and high-occupancy vehicles. This should result in reduced VMT and reduced air pollution. These strategies reinforce the centers identified in the Concept L.A. and Citywide Plans. Examples of further strategies needing study include the following:

- a. Establishment of Differing Parking Requirements for Distinct Areas of the City.
  - b. Preferred Parking Outside Center.
  - c. Parking Rate Price Disincentives.
  - d. Parking Restrictions in Core Areas of Centers.
  - e. Reevaluation of Funding Off-Street Parking by Meter Revenues.
40. City Transportation Plan (study) The City Transportation Plan is intended to serve as a guide to City representatives to SCAG, the Los Angeles County Transportation Commission and other agencies in presenting the official position of the City on transportation matters affecting the City. Portions of the City Transportation Plan will be incorporated into the City's General Plan.

The Phase I report summarizes the status of transportation planning in the City. It contains information on the following transportation matters:

Transportation Policies - actions taken and policies adopted by the City Council on a variety of transportation issues;

Status of Transportation Today - Travel characteristics and travel demand, the use of public transit, the movement of goods; Financial Issues - funds that are available, where they are derived, how they are allocated and expended.

Institutional Arrangements - the roles of various City and non-City agencies in transportation;

Critical deficiencies - a summary of transportation related deficiencies, including policies, institutional arrangements, financing, and facility deficiencies;

Phase II Recommendations - initial outline of the work necessary for the preparation of a City Transportation Plan, including organizational framework, delineation of the scope of work, and an estimate of the required manpower.



When the proposed Department of Transportation is created, one of its primary duties will be the preparation of the City Transportation Plan.

41. Street Improvement Program (Bureau of Engineering - ongoing)
  - a. Flow Improvement The City should continue to widen existing streets, eliminate jogs and bottlenecks. This is an on-going program under the 5-Year Capital Improvement Program. Program provides for better vehicular traffic circulation resulting in some reduction in vehicular exhaust emissions.
  - b. Improve Traffic Flow on Glendale Boulevard Between Glendale Freeway and Temple Street This project, which is in the design phase proposes use of overhead reversible lane operation signs to improve vehicular traffic flow during peak hours resulting in some auto exhaust emission reduction and the speed up of bus operation along this heavily used transit corridor. (See also City Program No. 27.)
42. Street Maintenance Program (Bureau of Street Maintenance - ongoing) This program provides for the restoration, rehabilitation and resurfacing of existing streets. The resulting improvements in traffic circulation leads to a minor reduction in vehicular exhaust emissions.
43. Bus Facilities Improvement Program (Bureau of Engineering, new) The following improved accommodations for bus passengers are intended to encourage increased patronage resulting in reduced VMT.
  - a. Construct Bus Stop Shelters in Civic Center Area Improved accommodations for bus passengers should encourage increased patronage resulting in reduced VMT.
  - b. Construct 15 Bus Stop Shelters on a Citywide Demonstration Basis This proposed project, under consideration by the City Council would provide improved accommodations for bus passengers which should encourage increased patronage resulting in reduced VMT.
  - c. Construct Landing Areas and Eliminate Physical Obstructions at Bus Stops Locations are being selected and construction schedules prepared to provide improved accommodations for bus passengers which should encourage increased patronage resulting in reduced VMT.

#### ENERGY/ENVIRONMENT

44. Require Proper Lot Orientation in New Subdivisions (City Planning - new) Provides for proper sun for solar collection and less cooling needs in summer.
45. Use of Trees and Landscaping for the Improvement of Air Quality (City Planning - new) The City will cooperate with the California Conservation Project to develop a program for using trees and landscaping to improve the air quality in Los Angeles.

The California Conservation Project, which operates an information and educational center in Los Angeles in a city-owned facility, has received a grant from the California Department of Forestry to expand its program to offer assistance to the public and governmental agencies. Assistance will be provided in the following areas: smog-tolerant tree reforestation, the use of urban trees for energy conservation and air pollution reduction, promoting public and private cooperation, and promotion and facilitation of community involvement which enhances urban environmental awareness.



The Planning Department's Environmental Review Section requires use of shade trees adjoining south and west facing walls to reduce summer sunlight for approval of development projects.

46. Actively Encourage Adequate Funding at both State and Federal Levels for Research and Development of Alternative Energy Sources (Mayor and City Council - ongoing)
47. Solar Energy Code for City (Department of Building and Safety - ongoing) The Solar City Committee worked with the Building and Safety Department in bringing together all sections of the City Building Code relevant to solar energy into a single document.

It is also working on streamlining the handling of permits and testing new systems. The Department's testing lab has tested and approved roughly 20 solar devices and systems and the lab's approval for safety and durability is sought by industry.

A "solar hot line" has also been set up to assist individuals and businessmen with permit and testing problems.

48. Consideration of the City Building Code Revisions to Reflect Energy Concerns such as the following (Department of Building and Safety - new):
  - a) light color roofs
  - b) natural ventilation
  - c) increased wall and roof insulation
  - d) limitation or control on the orientation of total window area
  - e) consideration for solar rights
  - f) glazed windows
  - g) promote natural lighting.
  - h) conservation of natural gas
  - i) maximum utilization of solar heating and natural cooling
49. Heating and Cooling (Bureau of Public Buildings - ongoing) Thermostat settings in public buildings for heating and cooling were adjusted for conservation in February, 1974. Building operators are maintaining cooling within a range of 76-78° and heating at 64-66°.

As appropriate for the varying mechanical systems of City buildings, adjustments have been made to maximize the use of outside air instead of refrigeration for cooling, and the City Hall East heating/cooling/ventilating system is operated to prevent simultaneous heating and cooling, a characteristic of many modern buildings.

50. New Conservation Lighting Standards (Bureau of Public Buildings - ongoing) Specific standards for lighting that were consistent with Federal conservation guidelines. The lighting standards were adopted after discussions with the Interdepartmental Committee on Energy Conservation and with representatives of the City Safety Inspector, with respect to possible conflict between safety and conservation for lighting.
51. New Lighting Standards (Bureau of Public Buildings - ongoing) New City requirements (established in 1974) have been applied to all new municipal buildings and renovations, and the Bureau has been systematically reducing lighting levels to these standards. Reduction from initial design levels of about 40% has been accomplished in City Hall East. Work is about 70% complete at this time. Overall lighting reduction in the Civic Center complex is about 25% from design levels. In addition, the Bureau has carried on a regular program of replacing inefficient incandescent light fixtures with energy-saving fluorescent fixtures.

52. New Buildings Energy Efficiency (Bureau of Public Buildings- ongoing study) A proposal was directed to the Mayor to establish energy efficiency as the top priority in the design and construction of new City buildings. This was done as an administrative action within the Department of Public Works by amendment to the "Architect's Instruction Book" in January 1976.

As guidelines for staff designers of City facilities, the City Architect has established minimum design criteria. Since December 1975, about ten new buildings have had or are in the process of having energy efficiency calculations performed while awaiting the enactment of Title 24, the State mandatory standards for nonresidential buildings.

53. Street Lighting System (Bureau of Street Lighting- ongoing) This system accounts for the largest single use of energy among the Council-controlled departments. This is the result of the system's size and the requirement for effective illumination for public safety.
- a. Energy and Cost Conservation Program The two primary means of securing energy savings in street lighting operations are in (1) increasing the efficiency of the equipment to use less electricity for the light generated or (2) de-activating a portion of the lights. The Bureau of Street Lighting has begun implementation of the energy and cost conservation program as approved by the City Council. This program retrofits and modifies incandescent street lights with more efficient equipment to secure savings in both energy and cost of operation.
  - b. New Street Lighting Systems Every year the total inventory of street lighting installations (physical plant) increases about 2% or about 4,000 installations as a result of various types of projects, including assessment lighting districts and large housing tract developments. It has been normal practice in the past to install mercury vapor units. The City's practice now is to install more energy-efficient lamps, usually high-pressure sodium, where practical and feasible. Energy savings amount to 30-40%. This is an ongoing policy with no completion date other than when every street within the City is properly lighted.
54. Flashing of Traffic Signals (Department of Transportation- ongoing) The Department has formulated a plan for operation of traffic signals in a flashing mode during late night hours at selected lower traffic locations throughout the City. Operation of an initial group of 81 signals in this flashing mode will result in electrical energy savings. This plan will be implemented as rapidly as equipment changes can be scheduled.
55. Automatic Light Shut-Off (Department of Water and Power - ongoing) In addition to use of DWP building conservation techniques, a DWP innovation is automatic shut-off of almost all office lights after business hours to insure lights are not burning in vacant offices.
56. Computerized Power Allocation (Department of Water and Power - ongoing) The DWP general office building is one of eleven downtown office buildings connected to a central computer network which is receiving, recording, and charting energy and load patterns in a \$540,000 pilot program initiated last year by ERDA. Soon, building engineers in the eleven buildings will begin receiving and accepting instructions from the computer program to reduce power consumption at peak periods, reducing demand for the burning of fossil fuels for electricity for each building and system load for DWP.



57. Methane Extraction/Production (Bureau of Sanitation- ongoing) On July 16, 1977 an agreement was signed between the Departments of Public Works and Water and Power for extraction and use of about 2,000 cubic feet per minute of gas generated in the completed Sheldon and Arleta landfill. The fuel value of the gas is approximately 500 BTU per cubic foot. Use would be for thermal power generation in the Valley Generation Station of the Department of Water and Power. Heat value equivalent to approximately 1.4 billion BTU's per day will be recovered. Similar projects are planned for other sanitary landfills in the City.

As a result of both a recently completed contract that converted secondary digestors to mixed primaries and an ongoing program of digester renovation at the Hyperion Treatment Plant, gas production from digesting wastewater solids is expected to increase by about 1,000,000 cubic feet per day. This in turn is an increase of about 650 million BTU's per day. Most of the increase will be considered for utilization, under an existing contract, at the Scattergood Plant of the Department of Water and Power. Also, additional digester capacity is being provided at the Terminal Island Treatment Plant -- when completed this should result in additional methane gas production.

58. Installation of Efficient Air-Oxygen Transfer Devices (Bureau of Sanitation- ongoing) Activation of the new Terminal Island and Los Angeles-Glendale facilities, as mandated by State and Federal requirements, has resulted in an increase in power usage by the Bureau of Sanitation of approximately 29,000,000 KWH per year. Every effort to improve processes to limit power usage is being made. The most promising current avenue of investigation would appear to be the installation of more efficient air-oxygen transfer devices. Substantial pilot tests are now underway on several such units. If successful, power savings of as much as 14,000,000 KWH per year may be possible.
59. Refuse Load Consolidation (Bureau of Sanitation- ongoing) Operations in refuse collection were revised so that the number of trips to disposal sites could be reduced. Partial loads were held over in the yards on a schedule found to be the most effective. Data developed by the Bureau has shown that a savings of approximately 210,000 gallons per year in diesel fuel has resulted.
60. Resource Recovery (Bureau of Sanitation- study) Experimental work directed at resource recovery including production and eventual testing of a refuse derived fuel is now underway at the East Valley Refuse Collection Yard. Energy recovery from refuse using techniques such as boiler fueling or pyrolysis is a very complex process at the present time. The Bureau is working on the problem in a step-wise manner. A satisfactory refuse grinder for ferrous metals recovery systems has been developed, and 1977-78 budgetary funds were provided for the addition of an air classifier to produce refuse derived fuels. Planning for future testing of non-ferrous metals and energy recovery using the refuse derived fuels is now underway.
61. Solar Hot Water Heaters in Homes of Department of Water and Power Customers (Department of Water and Power- ongoing) The DWP will place solar hot water heaters in the homes of 100 of its customers who are paying high electricity bills which result from the use of electric hot water heaters. Contracts are now being drawn. Volunteer customers will be selected, and they will shop for heaters on the market. The customers must select those approved by City Building and Safety Department. DWP will charge a predetermined amount on the electric bills of these customers. The charge will be less than that of electricity for water heating. DWP will monitor the performance of the systems.



62. Solar Police Station (Bureau of Public Buildings- ongoing) The largest solar project within the City will be at Wilshire Division Police Station. It will have complete solar space heating and hot water. It will employ collectors mounted on a special assigned parking lot canopy. The project will be funded primarily by a grant from the Department of Energy. A design contract was recently signed with one of area's small solar energy businessmen who helped the City win the grant.
63. Solar Electric Power Plant (Department of Water and Power- ongoing) An agreement was signed for the world's first commercial (10 megawatts) solar electric power plant. The Los Angeles Department of Water and Power will work with the Southern California Edison and the Federal Department of Energy in this effort. It will be built near Barstow and it will generate electricity by the early 1980's. It was designed by McDonnell Douglas.
64. Solar Fire Station (Bureau of Public Buildings- ongoing) Construction has begun on the first of several new City fire stations that will be equipped with solar water heaters. The first will be in East Los Angeles. All new stations will be built with plumbing that will allow retrofit of solar later, should the first system prove successful.
65. Solar Energy for City Office Buildings (Bureau of Public Buildings- ongoing) The new headquarters of the Hyperion Sewage Treatment plant will be equipped with a solar hot water heater. It is being installed by local businessmen and is now under construction.
66. Optimum Energy House This project is being built by students of the Los Angeles Trade Technical across from the Convention Center. It will feature solar-assisted heat pumps and many other ways to save energy in a cost/effective fashion.
67. Solar Low-Income Housing (Community Redevelopment Agency- ongoing) This project is being built by the Pico Union Community Development Corporation. The townhouses should be completed by mid-1979.
68. Solar Swimming Pool (Bureau of Public Buildings- ongoing) This project in Echo Park has been approved by City Council. Other swimming pool projects will be scheduled for retrofit as funding becomes available.
69. Solar City Power Plant (Department of Water and Power- ongoing) This facility will convert sunlight directly into electricity without first converting it to steam. The Federal Department of Energy has granted \$220,000 to the Department of Water and Power for design of photovoltaic (solar) cells system to supply electrical energy at the Valley Steam Plant.
70. Consumer Assistance on Solar Information (study) City help will be provided as a result of a survey showing that a small but significant proportion of solar permit holders have had problems with their systems. A complete booklet of information and advise is being prepared.
71. Sun Access and Use (City Planning- ongoing) Sun access must be protected in order to develop solar energy. The Planning Department produced a study for the Solar City Committee on the "Right To Sunlight" in Los Angeles. The Solar Committee meetings have been the earliest forum for many other emerging issues in solar energy, such as financing, utility leasing programs and builders' attitudes toward solar energy.

72. Vehicle Fuels Reduction Programs (Bureau of Fleet Services- ongoing) Recent data show that City vehicle fuel consumption was down more than 6% compared to the comparable period the year before. Reduction was due to the Mayor's directive to exercise control, purchase of smaller more efficient new vehicles, and closer monitoring of fuel dispensing and better record keeping.
73. Natural Gas Conservation by the Recreation and Parks Department A policy in lowering temperatures in all City pools to 78 degrees has been instituted. The Department is also surveying pool covers both to prevent vandalism and to yield a rapid payback in gas savings.
74. Development of Low-Emission Fuel-Efficient Automobile and Truck Engines Auto engine efficiency can be taken into consideration in air quality planning. The City should assume a leading role in advocating advancement in vehicle engine technology. It should seek ways to support advancement directly and indirectly, as through preferential purchasing of fuel-efficient vehicles.
75. Development of Low-Pollution Fuels as Substitutes for Natural Gas and Petroleum Distillates Low-pollution fuels as substitutes for natural gas and petroleum distillates appear promising. Recent developments suggest that methane can be used as motor vehicle fuel. The City should monitor research in this area and should offer its vehicle fleet for testing purposes where this will not result in additional costs to the City.
76. Environmental Review - Interior Controls (City Planning- ongoing) Standard air quality mitigation measures required as a part of certain private developments through the environmental impact report process include the following:
 

For Residential Projects - Central Air Circulation System or air conditioning system with electrostatic precipitators and charcoal filters. Note: In HUD subsidized housing for aged, sealed window coolers which do not allow outside air are used with central hall air circulation systems.

For Large Industrial and Commercial Projects - Requirement of a Parking Management Plan approved by Advisory Agency (consisting of bus subsidy, preferred parking, company sponsored chartered bus and vans).
77. Open Space Plan Combined with Concept Los Angeles - ongoing, 1c.
78. Conservation Plan Combined with Concept Los Angeles - ongoing, 1c.
79. Power Plant Combustion Boiler Modifications (Department of Water and Power - ongoing) DWP recently altered the operations of boilers that generate power at 18 of the 22 "units" within the City. These changes will reduce the overall amount of emissions produced from generation, especially NO<sub>x</sub>.
80. SCATTERGOOD UNIT 3 Modifications (Department of Water and Power - ongoing) DWP's newest power plant has been recently modified to enable it to operate on natural gas instead of fuel oil. While costly to modify (this program and the boiler modifications indicated in the above program represent \$100 million in work) this program greatly reduces NO<sub>x</sub> emissions, as well as SO<sub>x</sub> and particulate matter.

81. Low Sulphur Power Plant Fuel (Department of Water and Power - ongoing) DWP recently started to use fuel oil which is 50% "cleaner" than previous fuel. The new standard is  $\frac{1}{4}$  of 1% sulphur content.
82. Energy Conservation - Residential Retrofit Inspection Program If a regional residential retrofit program is developed by the Energy Commission and the Public Utilities Commission, requiring energy conservation features to be added when a change of home ownership occurs, the Department of Building and Safety will be responsible for enforcement. The proposed regional program (N-2) will be paid for by a fee system.
83. Purchase of Low-Emission, High-Fuel Economy Government Vehicles (Bureau of Fleet Services, ongoing) The City will continue to purchase low polluting, high-fuel economy vehicles for its fleet. The City will consult the Air Resources Board list of those vehicles with the lowest emission levels and purchase from among those found to be at least 50% cleaner than required by existing emissions control standards.
84. Low-Emissions Tune-up for Government Vehicles (Bureau of Fleet Services, ongoing) The City has an ongoing maintenance program for all its fleet vehicles. The City will maintain this program to insure that its fleet vehicles are maintained at the prescribed emissions level.





## APPENDIX B: Program Evaluation

The City of Los Angeles has approximated its sub-regional proportion of (a) existing emissions, (b) 1987 emissions, (c) allowable emissions, and the (d) required emissions reduction. The numbers are based on Table VII of Chapter I; Tables 1, 2, 4, and Figures 9-22 of Chapter V; Tables 1a, 4, 12a, 12b, 12c and Figures 1-6 of Chapter VII; of the Regional AQMP, as well as the calculated "L.A. City Base Year Emissions 1975-76".

Of the (e) "SCAG Recommended Programs Requiring City of Los Angeles Implementation", two programs which are presently not being recommended require emission reduction substitution. This will affect category (f) "City Requirement for Emission Substitution". This substitution is proposed to be made up by the emissions reduction of (g) "Contributory Programs" and (h) "Recommended Programs for Additions and Substitution".

The (i) "Net Balance" indicates that implementation of the City's AQMP will more than accomplish the City's required emissions reduction.

The emission reductions for individual regional programs (Appendix C & D) are based on data presented in Chapter IX of the Regional Air Quality Management Plan. Indicators used to determine City percentages included population, general aviation flights, numbers of employees by industry, and vehicle miles traveled.

It should be noted, that the best preliminary data available from SCAG, the Air Quality District and City Departments were utilized in the evaluations. Further refinement will take place as a part of the Plan's implementation monitoring and refinement process.

B.1. CURRENT CONTROLS AND AQMP REQUIRED REDUCTIONS

## CITY (TONS/DAY)

SOURCE	RHC	NO <sub>x</sub>	CO	SO <sub>x</sub>	T <sub>sp</sub>
(a) 1976 Emissions (Percent of Regional Emissions)+	+432.9 (25.6%)	+355.8 (27.3%)	+2162.0 (25.6%)	+130.1 (30.8%)	+63.1 (23.5%)
Growth	+1.9	+3.3	+12.1	+2.0	+.5
1987 Emissions	+434.8	+359.1	+2174.1	+132.1	+63.6
1976 Mobile Controls*	- 78.6	- 25.2	-618.6	-	-
Other Current Controls**	-143.8	-116.5	-95.3	-84.4	-10.9
(b) 1987 Emissions with Assumed Controls (Percent of Regional Emissions)	+212.4 (26.1%)	+217.4 (18.9%)	+1460.2 (35.6%)	+47.7 (12.3%)	+52.7 (20.0%)
<u>TO MEET MOST STRINGENT FEDERAL STANDARDS IN 1987</u>					
(c) City's Proportion of Allowable Emissions*** (Percent of Regional Allowable)	-132.1 (26.1%)	-151.2 (18.9%)	-882.9 (35.6%)	-68.1 (12.3%)	(-48.4) (20.0%)
(d) City's Proportion of Required Emissions Reduction	+80.6	+66.3	+576.0	-	(4.2)

\* Includes only effect of rules already implemented in 1976.

\*\* Includes effect of rules adopted through July 1978 to be implemented by 1987.

\*\*\* Allowable Emissions are based on the Proportional Percentage of Emissions created by the City of Los Angeles. Tsp allowable emissions shown in parentheses do not include background concentrations.

+ See Chart that follows on "LA City Base Year Emissions - 1975-76"



SOURCE	RHC	NO <sub>x</sub>	CO	SO <sub>x</sub>	T <sub>sp</sub>
SCAG Recommended (Oct 78) Programs that will be Implemented by other Agencies (Not under LA City Control)	119.84	119.91	433.26	-	25.98
.Supported by City	98.52	105.66	391.53		25.47
.For further consideration	20.39	14.25	41.73		.51
.Rejected	.93	0.00	0.0		0.0
(e) SCAG Recommended (Oct 78) Programs Requiring City of LA Implementation	5.03	6.79	49.17	-	.93
.Supported by City	-4.86	-6.68	-47.53		-.91
.For Further Consideration	0.0	.02	.05		0.0
.Rejected	.07	.09	.59		.02
.Insufficient Data	.10	0.0	1.0		0.0
(f) City Requirement for Emission Substitution	+.17	+.09	-1.59	-	+0.02
(g) Contributory Programs (Total)	-0.16	-0.67	-1.76	-	-0.19
(h) Recommended Programs for Additions and Substitution *	-1.33	-1.62	-12.05	-	-
(i) Net Balance **	-1.32	-2.20	-12.22	-	-0.17

\* From page 7. Emissions for these measures and alternative substitution measures are listed in Appendix F.

\*\* Minus notations indicates a credit, e.g. compliance in meeting the standards.

LOS ANGELES CITY<sup>1</sup>  
 BASE YEAR EMISSIONS\* - 1975-76  
 BY MAJOR SOURCE CATEGORY (TONS/DAY)  
 AVERAGE SUMMER WEEKDAY

SOURCE	THC				RHC				CO			NO <sub>x</sub>			SO <sub>x</sub>			T <sub>sp</sub>		
	Tons/Day	% of Man-Made	% of Total City SCAB		Tons/Day	% of Man-Made	% of Total City SCAB		Tons/Day	% of Total City SCAB		Tons/Day	% of Total City SCAB		Tons/Day	% of Total City SCAB		Tons/Day	% of Total City SCAB	
STATIONAR (Area + Point)	192.6	40.9	26.4	28.4	145.4	36.4	33.6	28.5	6.5	0.3	3.0	141.3	39.7	29.2	111.4 <sup>(2)</sup>	85.6	31.6	32.7 <sup>(2)</sup>	51.3	21.2
On-Road Mobile	253.9	54.0	34.8	26.2	231.6	58.0	53.5	26.2	2017.1	93.3	26.2	181.8	51.1	26.2	9.7	7.5	26.2	24.6	38.6	26.2
Off-Road Mobile	24.1	5.1	3.3	26.2	22.1	5.6	5.1	26.3	138.4	6.4	26.3	32.7	9.2	26.2	9.0 <sup>(3)</sup>	6.9	28.1	6.4 <sup>(3)</sup>	10.1	27.8
Subtotal (Man-Made)	470.6	100.0		27.1	399.1	100.0		27.0	2162.0	100	25.6	355.8	100	27.3	130.1	100	30.8	63.7	100	23.5
Natural Sources*	259.0		35.5	22.9	33.8		7.8	15.7												
TOTAL	729.6		100	25.4	432.9		100	25.6	2162.0	100	25.6	355.8	100	27.3	130.1	100	30.8	63.7	100	23.5

\* Includes vegetative, landfills and animal waste.

NOTES: (1) Whenever City data was not available County percentages have been assumed.

(2) Based on 1973 ICR File, No. of Manufacturing (D19-39) and Electric, Gas & Sanitary Services (E49) Worksites; Ratio of City (7114) vs. County (16,845) 42.2%.

(3) Based on 1973 ICR File, No. of Transportation (E40-45, 47) and Agriculture (A1-2) Worksites; Ratio City (1762) vs. County (4478) 39.35%

## B.2. METHODOLOGY

### Categories to Analyze:

- . Effectiveness in reducing various types of pollutants
- . Cost/ton of pollutants reduced
- . Public Support (based on past indications)
- . Political Concerns (based on past indications)

#### A. Effectiveness

The effectiveness of the proposed control tactics was based on the following indicators:

- . Percent Reduction in Emissions
- . Percent Reduction in VMT
- . Percent Reduction in Trips
- . Percent Increase in Vehicular Speeds, or
- . Increased Capacity

##### Points

3% or more reduction	= Very Effective Program	+3
1 to 2.99% reduction	= Effective Program	+2
.1 to .99% reduction	= Minor Effect	+1
.001 to .099% reduction	= Slight Improvement	+
0 reduction	= Zero Improvement	0
Increase	= Counter-productive	-1

#### B. Cost/ton

Proposed programs either provided a net savings or imposed a mandated cost on the private or public sector. From data provided by City departments, a cost/ton/year was derived, and point values were assigned on the following basis:

##### Points

Net Savings		+2
\$0 - 3,000	= Low Cost	+1
\$3,001 - 6,000	= Moderate Cost	0
\$6,001 and over	= High Cost	-1

In those few instances where this was not possible, a surrogate measure was employed. These data were also supplied by City departments in their evaluation of the costs of certain programs. The program cost categories were divided as follows:

##### Points

Net Savings		+2
\$0 - 50,000	= Low Cost	+1
\$50,001 - 1,000,000	= Moderate Cost	0
\$1,000,001 and over	= High Cost	-1



### C. Public Support

In many instances, the level of public support for certain types of strategies was known, either because strategies have been employed and reaction proved, or strategies have been suggested and the level of public acceptance has been gauged. Based upon present knowledge of public acceptance, the following point values were given:

#### Points

Known Acceptance	+1
Unknown or balanced	0
Known Rejection	-1

### D. Political Concerns

Utilizing historical reference, proposed programs were separated into those that were known or believed to have political acceptance or rejection by decision makers in the City of Los Angeles.

#### Points

Politically Acceptable	+1
Unknown or balanced	0
Politically Unacceptable	-1

### E. Total Score/Ranking

The points were summed for categories A through D to determine the final score. This score enabled priority recommendations to be made.

6,5,4	Programs supported by City
3,2,1,+	Programs for further consideration that may have to be implemented to achieve Federal Standards
N.A.	Programs to be given further consideration as new data are available.
0,-1,-2	Programs recommended for rejection.

### F. Contributory Programs

Programs listed in this category are ongoing local activities which offer important social benefits such as mobility improvements or energy conservation. These activities have marginal air quality benefits and have received a plus (+) rating for effectiveness.

## 3. PROGRAM RATINGS

## CITY CONTROL TACTICS - STATIONARY

<u>Program</u>	<u>Effectiveness</u>	<u>Cost</u>	<u>Public</u>	<u>Political</u>	<u>Total</u>
1	+1	+1	+1	+1	+4
2	+1	+1	+1	+1	+4
3	0	0	0	0	0
44	+	0	+1	+1	+2+
45	+	0	+1	+1	+2+
46	NOT AN AIR QUALITY CONTROL TACTIC				
47	NOT AN AIR QUALITY CONTROL TACTIC				
48	+	0	+1	+1	2+
49	PRE - 1976 PROGRAM				
50	NA	NA	—	—	NA
51	NA	NA	—	—	NA
52	NOT AN AIR QUALITY CONTROL TACTIC				
53	+	+2	+1	+1	Contributory
55	NOT AN AIR QUALITY CONTROL TACTIC				
56	NOT AN AIR QUALITY CONTROL TACTIC				
57	+	+2	+1	+1	+3+
58	+	-1	+1	+1	+1+
59	PRE - 1976 PROGRAM				
60	NOT AN AIR QUALITY CONTROL TACTIC				
61	+	+1	+1	+1	Contributory
62	+	-1	+1	+1	Contributory
63	+1	-1	+1	+1	+2
64	+	-1	+1	+1	Contributory
65	+	-1	+1	+1	Contributory
66	+	NA	+1	+1	Contributory
67	+	NA	+1	+1	Contributory
68	+	NA	+1	+1	Contributory
69	NA	NA	—	—	NA
70	NOT AN AIR QUALITY CONTROL TACTIC				
71	NA	NA	—	—	NA
72	PRE - 1976 PROGRAM				
73	+	+1	-1	-1	-1
74	NOT AN AIR QUALITY CONTROL TACTIC				
75	NOT AN AIR QUALITY CONTROL TACTIC				
76	NOT AN AIR QUALITY CONTROL TACTIC				
77	NOT AN AIR QUALITY CONTROL TACTIC				
78	NOT AN AIR QUALITY CONTROL TACTIC				
79	PRE - 1976 PROGRAM				
80	PRE - 1976 PROGRAM				
81	S C A Q M D REQUIRED PROGRAM				
82	+	+1	+1	+1	+3+

## CITY CONTROL TACTICS - MOBILE

<u>Program</u>	<u>Effectiveness</u>	<u>Cost</u>	<u>Public</u>	<u>Political</u>	<u>Total</u>
4	REGIONAL PROGRAM		H-86		
5	+1	-1	NA	NA	**
6	REGIONAL PROGRAM		H-85		
7	REGIONAL PROGRAM		H-89		
8	NOT AN AIR QUALITY CONTROL TACTIC				
9	+3	+1	+1	0	+5
10	NOT AN AIR QUALITY CONTROL TACTIC				
11	+	+1	+1	0	Contributory
12	+1	0	-1	-1	-1
13	NOT AN AIR QUALITY CONTROL TACTIC				
14	NOT AN AIR QUALITY CONTROL TACTIC				
15	+1	+1	+1	+1	+4
16	+	0	+1	+1	Contributory
17	+1	+1	+1	+1	+4
18	+1	-1	+1	+1	+2
19	+	0	0	+1	Contributory
20	REGIONAL PROGRAM H-85				
21	+	-1	+1	+1	Contributory
22	+2	+1	+1	+1	+5
23	+	-1	0	0	-1
24	+	0	+1	+1	Contributory
25	+	0	+1	+1	Contributory
26	+	0	+1	+1	Contributory
27	NOT AN AIR QUALITY CONTROL TACTIC				
28	NOT AN AIR QUALITY CONTROL TACTIC				
29	NOT AN AIR QUALITY CONTROL TACTIC				
30	+	+1	+1	+1	Contributory
31	+1	+1	+1	+1	+4
32	+	-1	+1	+1	+1+
33	+1	-1	+1	+1	+2
34	+1	-1	+1	+1	+2
35	+1	-1	+1	+1	+2
36	+	+1	+1	+1	Contributory
37	+1	+2	+1	0	+4
38	+	-1	+1	+1	1+
39	NOT AN AIR QUALITY CONTROL TACTIC				
40	NOT AN AIR QUALITY CONTROL TACTIC				
41	+	-1	+1	+1	Contributory
42	+	NA	+1	+1	Contributory
43	+	-1	+1	+1	Contributory
54	+	+1	+1	+1	Contributory
83	+	0	+1	+1	Contributory
84	+1	+1	+1	+1	+4

\* Regional numbers refer to SCAG's Draft AQMP, dated August 1978.

\*\* City Council Decision Pending.



## APPENDIX C

APPENDIX C  
SCAG RECOMMENDED PROGRAMS - RHC

C-1

Control Measure	Implementing Agency	Regional Reductions			L.A. City Proportional Share				City Staff Recommendation		
		Tons/Day 1982	Tons/Day 1987	Annualized Cost	%	Tons/Day 1982	Tons/Day 1987	Annualized Cost	Recommended	For further consideration	Reject
1. Increased air passenger load factor (H-1)	Airline operators, FAA; 1983	--	0.9	Savings	88.0	--	0.79	Savings	X		
2. Jet aircraft ground taxi improvements (H-2)	Airline operators, FAA; 1983	--	2.7	Savings	88.0	--	2.38	Savings	X		
3. Triple-trailer trucking (H-3)	Caltrans, DOT, PUC, Individual truck operators; Post-1982	--	2.3	Savings	22.7	--	.52	Savings	X		
4. Modified work schedules (H-4)	Public and private employers; 1981	1.7	3.4	Savings	32.1	1.55	1.09	Savings	X		
5. Parking management: Carpool preferential parking (H-5)	Local governments, Parking lot operators, Employers; 1981	0.4	0.3	No cost	24.2/22.7	0.10	0.07	No Cost			X
6. Piston engine aircraft emission controls (H-6)	ARB, Aircraft manufacturers; 1983	--	5.6	\$1,530,000	24.8	--	1.39	\$379,440	X		
7. Emission standards: New off-road heavy duty non-farm equipment (H-7)	ARB, Manufacturers; 1983	--	5.7	\$1,642,000	26.3	--	1.50	\$431,846	X		
8. Maintain leaky valves in non-refinery industrial processes (H-9)	SCAQMD; 1980	0.5	0.5	\$186,000	26.1	0.13	0.13	\$48,546	X		
9. Electrify railroad switching yards (H-11)	Railroads; 1987	--	4.4	\$2,100,000	50.0	--	2.2	\$1,050,000	X		
10. Trip reduction production (H-13)	SCAG, County Transportation Commissions, Caltrans, Local governments; 1980	7.3	11.3	\$5,000,000	24.2/22.7	4.55	1.77	\$1,210,000/ \$1,135,000	X		
11. Emission standards: New farm equipment (H-15)	ARB, Farm equipment manufacturers; 1983	--	1.9	\$1,410,000	19.8	--	0.38	\$279,180	X		
12. Proposed 1978 emission standards: Jet aircraft engines (H-16)	FAA, EPA, Manufacturers and airlines; 1983	--	21.4	\$13,440,000	88.0	--	18.83	\$11,827,200	X		
13. Annual inspection and maintenance of light- and medium-duty vehicles (H-18)	ARB, DCA, DMV; 1982	74.9	61.7	\$106,505,000	29.2/27.7	21.87	17.09	\$31,099,460/ \$29,501,885	X		
14. Emission controls for small relief valves (H-19)	SCAQMD; 1980	0.2	0.2	\$207,000	39.7	0.08	0.08	\$82,179		X	
15. Substitute coatings used in metal furniture and fixtures manufacturing (H-20)	SCAQMD; 1982	10.3	12.3	\$10,990,000	30.0	3.09	3.69	\$3,297,000	X		
16. Substitute coatings used in fabrics and paper products manufacturing (H-21)	SCAQMD; 1982	9.3	9.3	\$552,400	45.4	4.22	4.22	\$250,790	X		
17. Emission controls for lawnmowers and garden equipment (H-22)	ARB; 1983	--	10.6	\$8,447,000	25.0	--	2.65	\$2,111,750	X		
18. Increased bicycle/pedestrian facilities (H-23)	Caltrans, Local governments, Private sector; 1980	0.4	0.5	\$10,600,000	24.2/22.7	0.1	0.11	\$2,565,200/ \$2,406,200			X
19. Improved emission controls for motor vehicles (H-24)	ARB, Auto manufacturers; 1983	--	52.0	\$84,775,000	22.7	--	11.80	\$19,243,925	X		
20. Reduce jet aircraft queuing delays (H-25)	FAA, Airport operators, Airlines; 1983	--	0.5	\$1,130,000	88.0	--	0.44	\$994,400	X		
21. Substitute coatings used in industrial maintenance (H-26)	SCAQMD; 1982	2.6	2.6	\$1,300,000	31.1	0.81	0.81	\$404,300	X		
22. Substitute coatings used in ship construction (H-28)	SCAQMD; 1985	--	2.4	\$1,111,000	7.2	--	0.17	\$79,992	X		
23. Emission controls on gasoline bulk plant operations (H-29)	SCAQMD; 1982	1.4	1.4	\$720,000	24.5	0.34	0.34	\$176,400	X		

## SCAG RECOMMENDED PROGRAMS - RHC

C-2

Control Measure	Implementing Agency	Regional Reductions			L.A. City Proportional Share				City Staff Recommendation		
		Tons/Day 1982	1987	Annualized Cost	%	Tons/Day 1982	1987	Annualized Cost	Recommended	For further consideration	Reject
24. Fugitive emission controls for random leaks at refineries (H-30)	SCAQMD; 1980	8.6	8.6	Savings	54.2	4.66	4.66	Savings	X		
25. Substitute coatings used in magnetic wire manufacturing (H-31)	SCAQMD; 1985	—	1.2	\$492,000	23.1	—	0.28	\$113,652		X	
26. Rideshare program (H-34)	Local governments, Employers, Commuter Computer; 1979	4.2	6.6	\$38,000,000	24.2/22.7	2.64	1.50	\$9,196,000/\$8,626,000	X		
27. Traffic signal synchronization (H-35)	Local governments, Caltrans; Pre-1982	0.4	0.9	\$5,040,000	33.3	.13	0.30	\$1,678,320	X		
28. Voluntary retirement of older cars (H-36)	ARB, DMV, SCAQMD; 1983	—	9.2	\$22,525,000	27.7	—	2.55	\$6,239,425		X	
29. Substitute coatings used in automobile manufacturing (H-37)	SCAQMD; 1982	8.6	8.6	\$7,135,900	28.8	2.48	2.48	\$2,055,139		X	
30. Substitute coatings used in metal can and coil stock manufacturing (H-39)	SCAQMD; 1982	8.4	8.4	Savings	35.9	3.02	3.02	Savings	X		
31. Emission controls on metal cleaning operations (H-42)	SCAQMD; 1980	5.6	5.6	\$438,600	24.7	1.38	1.38	\$108,334	X		
32. Solvent reductions in printing operations (H-43)	SCAQMD; 1982	14.9	14.9	Savings	46.3	6.90	6.90	Savings	X		
33. Substitute materials used in asphalt applications (cutback asphalt)(H-44)	SCAQMD; 1982	4.3	4.3	\$960,000	27.7	1.19	1.19	\$265,920	X		
34. Substitute coatings used in wood furniture finishes (H-45)	SCAQMD; 1982	2.7	2.7	\$1,820,000	33.1	0.89	0.89	\$602,420		X	
35. Emission controls for chemical manufacturing plants (H-46)	SCAQMD; 1986	—	1.4	\$985,000	33.9	—	0.47	\$333,915		X	
36. Emission controls for paint manufacturing plants (H-47)	SCAQMD; 1982	1.4	1.4	\$280,000	33.9	0.47	0.47	\$94,920	X		
37. Emission controls for rubber manufacturing plants (H-48)	SCAQMD; 1982	1.1	1.1	\$1,240,000	19.3	0.21	0.21	\$239,320		X	
38. Substitute coatings used in metal parts and products manufacturing (H-49)	SCAQMD; 1982	28.3	28.3	\$5,888,000	27.4	7.75	7.75	\$1,613,312		X	
39. Natural gas and oil product (H-50)	SCAQMD; 1982	0.3	0.3	\$400,000	54.0	0.16	0.16	\$216,000			X
40. Vegetable oil processing (H-53)	SCAQMD; 1982	0.1	0.1	\$40,000	48.0	0.05	0.05	\$19,200			X
41. Substitute coatings used in automobile refinishing (H-54)	SCAQMD; 1986	—	6.3	\$14,742,000	30.2	—	1.90	\$4,452,084		X	
42. Oil tank cleaning (H-56)	SCAQMD; 1982	0.9	0.9	\$2,100,000	6.6	0.06	0.06	\$138,600			X
43. Emission controls on pharmaceutical and cosmetics manufacturing operations (H-57)	SCAQMD; 1982	0.6	0.6	\$676,000	14.9	0.09	0.09	\$100,724		X	
44. Substitute coatings used in basic wood furniture manufacturing (H-59)	SCAQMD; 1985	—	3.2	\$5,408,000	33.1	—	1.06	\$1,790,048		X	
45. Electric vehicles (H-60)	ARB, Private sector; 1987	—	2.4	\$19,500,000	22.7	—	.54	\$4,426,500		X	
46. Marine fuel transfer operations (H-62)	SCAQMD; 1985	—	6.7	\$15,870,000	7.2	—	0.48	\$1,142,640			X



## SCAG RECOMMENDED PROGRAMS - RHC

C-3

Control Measure	Implementing Agency	Regional Reductions			L.A. City Proportional Share				City Staff Recommendation		
		Tons/Day 1982	Tons/Day 1987	Annualized Cost	%	Tons/Day 1982	Tons/Day 1987	Annualized Cost	Recommended	For further consideration	Reject
47. Substitute coatings used in the aerospace industry (H-65)	SCAQMD; 1983	—	0.7	\$13,000	25.4	—	0.18	\$3,302			X
48. Improved trucking efficiency (H-72)	Trucking operators, ICC, PUC; 1983	—	4.1	Undetermined	22.7	—	0.93	Undetermined		X	
49. Freeway facility changes supporting high occupancy vehicles (H-85)	Caltrans, Transit operators; 1983	—	1.1	*	40.0	—	.44	*		X	
50. Wilshire rail line (H-86)	SCR TD; 1986	—	0.3	*	93.0	—	0.28	*		X	
51. Los Angeles Downtown People Mover (H-87)	L.A. Community Redevelopment Agency; 1983	—	0.1	*	100.0	—	0.1	*	See Note **		
52. Congestion relief: Freeway widenings (H-88)	Caltrans; 1983	—	1.9	*	18.0	—	0.34	*	X		
53. Transit improvements (H-89)	Transit operators; 1983	—	0.6	*	42.0	—	0.25	*		X	
54. Future improvement of technological controls for stationary sources (H-90)	SCAQMD; 1983 - 1987	—	33.0	Undetermined	32.1	—	10.59	Undetermined	X		
55. Carpool savings for government employees (H-112)	Governments; Post-1982	Contained in H-34									
56. Purchase of government cars for low emission and high fuel economy (H-113)	ARB, All government entities; 1980 (mandatory after 1982)	0.0	0.0	\$450,000	24.2/ 22.7	0.0	0.0	\$108,900/ \$102,150		X	
57. Regular program of inspection/maintenance for government vehicles (H-114)	All government entities; 1979 (mandatory after 1982)	0.5	0.4	"See H-18"	29.2/ 27.7	.15	.09	"See H-18"	X		
58. Santa Ana corridor (H-117)	OCTD/Caltrans; 1987	—	0.3	*	0	—	0	0		X	
59. Reduce non-recurrent congestion (H-118)	Caltrans; 1979-87	0.4	0.3	*	24.2/ 22.7	0.1	.07	*		X	
60. Energy conservation: Commercial, Institutional and Industrial Audit Program (N-1)	Utilities, State; 1983	—	2.0	Savings	32.1	—	0.64	Savings	X		
61. Energy conservation: Residential Retrofit Program (N-2)	Local governments; Utilities, State; 1983	—	0.4	Savings	32.1	—	0.12	Savings		X	
TOTAL		200.3	382.8	373,123,900		69.17	124.89	110,470,283/ 108,061,958	103.38	20.39	1.00

\* Costs for these measures are not included because they are part of the Regional Transportation Plan or will be implemented for reasons other than air quality.

\*\* Pending decision by City Council.

## SCAG RECOMMENDED PROGRAMS - NOx

C-4

Control Measure	Implementing Agency	Regional Reductions			L.A. City Proportional Share			City Staff Recommendation		
		Tons/Day 1982	Tons/Day 1987	Annualized Cost	%	Tons/Day 1982	Tons/Day 1987	Annualized Cost	Recommended	For further consideration
1. Energy conservation: Commercial institution and industrial audits (N-1)	Utilities, State; 1983	—	20.9	Savings	32.1	—	6.71	Savings	X	
2. Energy conservation: Residential retrofit (N-2)	Local government, Utilities, State; 1983	—	10.7	Savings	28.9	—	3.09	Savings		X
3. Energy conservation: Street lighting (N-4)	Utilities and local governments; 1982	0.1	0.1	Savings	27.0	0.03	0.03	Savings	X	
4. Alter design of new residential space heaters (N-5)	SCAQMD rule adopted December 1, 1978									
5. Alter design of new residential water heaters (N-6)	SCAQMD rule adopted December 1, 1978									
6. Emission controls on cement kilns (N-7)	SCAQMD; 1983	—	3.3	Savings	29.9	—	1.14	Savings	X	
7. Emission controls on medium and small steam generators (N-8)	SCAQMD; 1983	—	12.3	\$4,700,700	41.1	—	5.06	\$1,931,988		X
8. Emission controls on industrial boilers (N-10)	SCAQMD; 1987	—	26.9	\$8,546,700	30.6	—	8.23	\$2,615,290	X	
9. Emission controls on refinery heaters (N-11)	SCAQMD; 1982	49.5	49.5	\$21,872,500	45.0	22.28	22.28	\$9,842,625	X	
10. Retardation of fuel injection timing for marine diesel engines (N-13)	Federal, State; 1985	—	0.4	\$62,000	30.6	—	0.12	\$18,972	X	
11. Emission controls on glass melting furnaces (N-14)	SCAQMD; 1985	—	5.9	\$2,625,000	29.9	—	1.76	\$784,375		X
12. Emission controls on stationary internal combustion engines (N-16)	SCAQMD; 1980	—	9.5	\$870,000	28.3	—	2.69	\$246,210	X	
13. Triple-trailer trucking (H-3)	Caltrans, DOT, PUC, Individual truck operators; Post-1982	—	3.7	*	22.7	—	.84	*	X	
14. Modified work schedules (H-4)	Public and private employers; 1981	0.8	2.4	*	32.1	.26	0.77	*	X	
15. Carpool preferential parking (H-5)	Local governments, Parking lot operators, Employers; 1981	0.4	0.4	*	24.2/22.7	0.10	0.09	*		X
16. General aviation aircraft engine emission controls (H-6)	ARB, Aircraft manufacturers; 1983	—	+3.5	*	24.8	—	+0.37	*	X	
17. Emission standards: New off-road heavy duty non-farm equipment (H-7)	ARB, Manufacturers; 1983	—	28.3	*	26.3	—	7.44	*	X	
18. Electrify railroad switching yards (H-11)	Railroads; 1983	—	17.7	*	50.0	—	8.85	*	X	
19. Trip Reduction Program (H-13)	SCAG, County Transportation Commissions, Caltrans, Local governments; 1980	7.0	13.7	*	24.2/22.7	1.69	3.11	*	X	
20. Emission standards - new farm equipment (H-15)	ARB, Farm equipment manufacturers; 1983	—	0.7	*	19.8	—	0.14	*	X	
21. Proposed 1978 emission standards: Jet aircraft engines (H-16)	FAA, EPA manufacturers, Airlines; 1983	—	0.8	*	38.0	—	0.70	*	X	
22. Annual inspection and maintenance of light duty vehicles (H-18)	ARB, DCA, DMV; 1982	49.1	66.6	*	29.2/27.7	14.34	18.45	*	X	
23. Emission controls for lawnmowers and garden equipment (H-22)	ARB; 1983	—	1.0	*	25.0	—	.25	*	X	
24. Increased bicycle/pedestrian facilities (H-23)	Caltrans, Local government, Private sector; 1980	0.2	0.4	*	24.2/22.7	.05	0.09	*		X

## SCAG RECOMMENDED PROGRAMS - NOx

C-5

Control Measure	Implementing Agency	Regional Reductions			L.A. City Proportional Share				City Staff Recommendation		
		Tons/Day 1982	Tons/Day 1987	Annualized Cost	%	Tons/Day 1982	Tons/Day 1987	Annualized Cost	Recommended	For further consideration	Reject
25. Improved emission controls for motor vehicles (H-24)	ARB, Auto manufacturers; 1983	—	83.4	*	22.7	—	18.93	*	X		
26. Rideshare Program (H-34)	Local governments, Employers, Commuter Computer; 1979	4.3	8.0	*	24.2/22.7	1.04	1.81	*	X		
27. Traffic signal synchronization (H-35)	Local governments, Caltrans; Pre-1982	+0.2	+0.3	*	33.3	+0.07	+0.10	*	X		
28. Voluntary retirement of old cars (H-36)	ARB, DMV, SCAQMD; 1983	1.9	1.9	*	29.2/27.7	0.55	0.53	*		X	
29. Electric vehicles (H-60)	ARB, Private sector; 1987	—	1.6	*	22.7	—	.36	*		X	
30. Improved trucking efficiency (H-72)	Trucking operators, ICC, PUC; 1983	—	9.7	*	22.7	—	2.20	*		X	
31. Freeway facility changes supporting high occupancy vehicles (H-85)	Caltrans, Transit operators; 1983	—	1.3	*	40.0	—	.52	*		X	
32. Wilshire rail line (H-86)	SCRTD; 1986	—	0.4	*	93.0	—	0.37	*		X	
33. Congestion relief: Freeway widenings (H-88)	Caltrans; 1983	—	+0.1	*	18.0	—	+0.02	*	X		
34. Transit improvements (H-89)	Transit operators; 1983	—	0.8	*	42.0	—	0.34	*		X	
35. Future improvement of technological controls for stationary sources (H-90)	SCAQMD; 1983-87	—	33.0	*	32.1	—	10.59	*	X		
36. Carpool savings for all city/county employees (H-112)	All government entities; Post-1982	Contained in H-34									
37. Purchase of city/county cars for low emission and high fuel economy (H-113)	ARB, All government entities; 1980 (mandatory after 1982)	.2	.1	*	24.2/22.7	0.05	0.02	*		X	
38. Regular program of inspection/maintenance for city/county vehicles (H-114)	All government entities; 1979 (mandatory after 1982)	0.6	0.7	*	24.2/22.7	0.15	0.16	*	X		
39. Santa Ana corridor (H-117)	OCTD/Caltrans; 1987	—	.4	*	0	—	0	0			X
40. Reduce non-recurrent congestion (H-118)	Caltrans; 1979-87	0.1	0.1	*	24.2/22.7	.02	.02	*		X	
TOTALS		114.0	413.2	\$38,676,900		40.49	126.70	\$15,439,960	112.34	14.27	0.09



## SCAG RECOMMENDED PROGRAMS - CO

C-6

Control Measure	Implementing Agency	Regional Reductions			L.A. City Proportional Share			City Staff Recommendation		
		Tons/Day 1982	Tons/Day 1987	Annualized Cost	%	Tons/Day 1982	Tons/Day 1987	Annualized Cost	Recom-mended	For further consid-eration
1. Increased air passenger load factor (H-1)	Airline operators, FAA; 1983	—	2.2	*	88.0	—	1.94	*	X	
2. Jet aircraft ground taxi improvements (H-2)	Airline operators, FAA; 1983	—	14.2	*	88.0	—	12.50	*	X	
3. Triple-trailer trucking; (H-3)	Caltrans, DOT, PUC, Individual truck operators; Post-1982	—	25.0	*	22.7	—	5.68	*	X	
4. Modified work schedules (H-4)	Public and private employers; 1981	14.2	29.2	*	32.1	4.56	9.37	*	X	
5. Carpool preferential parking (H-5)	Local governments, Parking lot operators, Employers; 1981	3.0	2.6	*	24.2/ 22.7	0.73	0.59	*		X
6. Piston engine aircraft emission controls (H-6)	ARB, Aircraft manufacturers; 1983	—	97.6	*	24.8	—	24.20	*	X	
7. Emission standards: New off-road heavy duty non-farm equipment (H-7)	ARB, Manufacturers; 1983	—	72.6	*	26.3	—	19.09	*	X	
8. Electrify railroad switching yards (H-11)	Railroads; 1983	—	7.3	*	50.0	—	3.65	*	X	
9. Trip Reduction Program (H-13)	SCAG, County Transportation Commissions, Caltrans, Local governments; 1980	53.3	92.6	*	24.2/ 22.7	12.9	21.02	*	X	
10. Emission standards: New farm equipment (H-15)	ARB, Farm equipment manufacturers; 1983	—	18.2	*	19.8	—	3.60	*	X	
11. Proposed 1978 emission standards: Jet aircraft engines (H-16)	FAA, EPA, Manufacturers and airlines; 1983	—	29.5	*	88.0	—	25.96	*	X	
12. Annual inspection and maintenance of light- and medium-duty vehicles (H-18)	ARB, DCA, DMV; 1982	693.8	500.0	*	29.2/ 27.7	202.59	138.50	*	X	
13. Emission controls for lawnmowers and garden equipment (H-22)	ARB; 1983	—	96.9	*	25.0	—	24.2	*	X	
14. Increased bicycle/pedestrian facilities (H-23)	Caltrans, Local governments, Private sector; 1980	3.5	5.0	*	24.2/ 22.7	.85	1.14	*		X
15. Improved emission controls for motor vehicles (H-24)	ARB, Auto manufacturers; 1983	—	561.0	*	22.7	—	127.35	*	X	
16. Reduce jet aircraft queuing delays (H-25)	FAA, Airport operators, Airlines; 1983	—	2.3	*	88.0	—	2.02	*	X	
17. Rideshare Program (H-34)	Local governments, Employers, Commuter Computer; 1979	32.0	54.4	*	24.2/ 22.7	7.74	12.35	*	X	
18. Traffic signal synchronization (H-35)	Local governments, Caltrans; Pre-1982	3.5	8.7	*	33.3	1.17	2.90	*	X	
19. Voluntary retirement of old cars (H-36)	ARB, DMV, SCAQMD; 1980	76.8	76.8	*	29.2/ 27.7	22.43	21.27	*		X
20. Electric vehicles (H-60)	ARB, Private sector; 1987	—	14	*	24.2/ 22.7	—	3.18	*		X
21. Improved trucking efficiency (H-72)	Trucking operators, ICC, PUC; 1983	—	38.0	*	22.7	—	8.63	*		X
22. Freeway facility changes supporting high occupancy vehicles (H-85)	Caltrans, Transit operators; 1983	—	8.9	*	40.0	—	3.56	*		X
23. Wilshire rail line (H-86)	SCRTD; 1986	—	2.4	*	93.0	—	2.23	*		X
24. Los Angeles Downtown People Mover (H-87)	L.A. Community Redevelopment Agency; 1983	—	1.0	*	100.0	—	1.0	*	See Note **	

\* Costs for these measures are covered in the Hydrocarbon Section.

\*\* Pending decision by City Council.

## SCAG RECOMMENDED PROGRAMS - CO

C-7

Control Measure	Implementing Agency	Regional Reductions			L.A. City Proportional Share			City Staff Recommendation		
		Tons/Day 1982	Tons/Day 1987	Annualized Cost	%	Tons/Day 1982	Tons/Day 1987	Annualized Cost	Recom-mended	For further consid-eration
25. Congestion relief: Freeway widenings (H-88)	Caltrans; 1983	—	15.8	*	18.0	—	2.84	*	X	
26. Transit improvements (H-89)	Transit operators; 1979	—	4.8	*	42.0	—	2.02	*		X
27. Carpool Savings for government employees (H-112)	Local governments; Post-1982	Contained in H-34								
28. Purchase of government cars for low emission and high fuel economy (H-113)	ARB, All government entities; 1980 (mandatory after 1982)	0.5	0.2	*	24.2/22.7	.12	.05	*		X
29. Regular program of inspection/maintenance for government vehicles (H-114)	All government entities; 1979 (mandatory after 1982)	4.3	3.3	*	29.2/27.7	1.26	.75	*	X	
30. Santa Ana corridor (H-117)	OCTD/Caltrans; 1987	—	2.7	*	0	—	0	0		X
31. Reduce non-recurrent congestion (H-118)	Caltrans; 1979-87	+6.6	+3.7	*	24.2/22.7	+1.6	.84	*		X
TOTALS		891.5	1790.9	*		244.34	460.81	*	439.06	41.78 0.59

\* Costs for these measures are covered in the Hydrocarbon Section.

## SCAG RECOMMENDED PROGRAMS AS NEEDED FOR STATE STANDARDS - SOx

C-8

Control Measure	Implementing Agency	Regional Reductions			L.A. City Proportional Share			City Staff Recommendation		
		Tons/Day 1982	Tons/Day 1987	Annualized Cost	%	Tons/Day 1982	Tons/Day 1987	Annualized Cost	Recommended	For further consideration
1. Petroleum coke calcining -80% reduction (S-1)	SCAQMD; 1982	17.4	17.9	\$1,835,000	54.2	9.43	9.70	\$1,021,670		X
2. Fluid catalytic cracking -70% reduction (S-3)	SCAQMD; Rule 1105	Adopted August 4, 1978								
3. Refinery fuel burning sources (S-4)	SCAQMD; Rule 431.2	Adopted December 2, 1978								
4. Sulfur content of diesel fuel (S-5)	ARB; 1982	17.8	19.9	\$11,340,000	32.1	5.71	6.39	\$3,640,140		X
5. Electric power generating equipment - 60% reduction (S-6)	SCAQMD; 1983	—	121.0	\$116,000,000	44.2	—	53.48	\$51,272,000		X
TOTALS		35.2	158.8	\$129,225,000		15.14	69.57	\$55,933,810		69.57



## SCAG RECOMMENDED PROGRAMS - TSP

C-9

Control Measure	Implementing Agency	Regional Reductions			L.A. City Proportional Share				City Staff Recommendation		
		Tons/Day 1982	1987	Annualized Cost	%	Tons/Day 1982	1987	Annualized Cost	Recommended	For further consideration	Reject
1. Filter dust from pharmaceutical manufacturing processes (P-3)	SCAQMD; 1980	0.4	0.4	\$280,000	33.9	0.14	0.14	\$94,920		X	
2. Filter dust from rubber products manufacturing processes (P-4)	SCAQMD; 1981	2.7	2.7	\$2,806,000	19.3	0.52	0.52	\$541,558	X		
3. Control dust emissions from construction and demolition projects (P-9)	SCAQMD; 1982	29.6	31.5	\$13,566,000	30.5	9.03	9.61	\$4,137,630	X		
4. Increased air passenger load factor (H-1)	Airline operators, FAA; 1983	—	1.0	*	88.0	—	0.88	*	X		
5. Jet aircraft ground taxi improvements (H-2)	Airline operators, FAA; 1983	—	6.6	*	88.0	—	5.81	*	X		
6. Triple-trailer trucking; (H-3)	Caltrans, DOT, PUC, Individual truck operators; Post-1982	—	0.4	*	22.7	—	.09	*	X		
7. Modified work schedules (H-4)	Public and private employers; 1981	0.2	0.5	*	32.1	.06	.16	*	X		
8. Carpool preferential parking (H-5)	Local governments, Parking lot operators, Employers; 1981	0.1	0.1	*	24.2/22.7	0.02	0.02	*			X
9. Electrify railroad switching yards (H-11)	Railroads; 1987	—	0.3	*	50.0	—	.15	*	X		
10. Trip Reduction Program (H-13)	SCAG, County Transportation Commissions, Caltrans, Local governments; 1980	0.9	1.8	*	24.2/22.7	.22	0.41	*	X		
11. Increased bicycle/pedestrian facilities (H-23)	Caltrans, Local government, Private sector; 1980	0.1	0.1	*	24.2/22.7	0.02	0.02	*		X	
12. Improved emission controls for motor vehicles (H-24)	ARB, Auto manufacturers; 1983	—	20.6	*	22.7	—	4.68	*	X		
13. Reduce jet aircraft queuing delays (H-25)	FAA, Airport operators, Airlines; 1983	—	1.1	*	88.0	—	0.97	*	X		
14. Rideshare Program (H-34)	Local governments, Employers, Commuter Computer; 1979	0.7	1.4	*	24.2/22.7	.17	0.32	*	X		
15. Electric vehicles (H-60)	ARB, Private sector; 1987	—	0.2	*	22.7	—	.05	*		X	
16. Improved trucking efficiency (H-72)	Trucking operators, ICC, PUC; 1983	—	0.9	*	22.7	—	0.20	*		X	
17. Freeway facility changes supporting high occupancy vehicles (H-85)	Caltrans, Transit operators; 1983	—	0.2	*	40.0	—	0.08	*		X	
18. Transit improvements (H-89)	Transit operators; 1979	—	0.1	*	42.0	—	0.04	*		X	
19. Future improvement of technological controls for stationary sources (H-90)	SCAQMD; 1983-87	—	8.6	*	32.1	—	2.76	*	X		
TOTALS		34.7	78.5	\$16,652,000		10.18	26.91	\$4,774,108	26.38	0.51	0.02

\* Costs for these measures are covered in the Hydrocarbon Section.

## APPENDIX D

APPENDIX D  
SCAG NON-RECOMMENDED PROGRAMS - RHC

D-1

Control Measure	Implementing Agency	Regional Reductions			L.A. City Proportional Share			City Staff Recommendation			
		Tons/Day 1982	1987	Annualized Cost	%	Tons/Day 1982	1987	Annualized Cost	Recommended	For further consideration	Reject Insufficient data
1. Retrofit Gasoline powered, non-farm, off-road heavy duty vehicles (H-8)	ARB and Construction Industry; 1987	3.3	3.5	\$2,200,000	24.2/22.7	0.8	0.8	\$532,400/ \$499,400	X		
2. Tow Jet Aircraft (H-10)	Airlines; 1987	--	12.3	\$522,000	88.0	--	10.8	\$459,360		X	
3. Fuel transfer at jet airports (H-12)	FAA, ARB, airports, airlines; 1987	--	0.5	\$50,000	88.0	--	0.4	\$44,000	X		
4. Wood flatstock coatings (H-14)	SCAQMD; 1980			Rule 1104 Adopted							
5. Exhaust emission controls, existing farm tractor - gasoline powered (H-17)	ARB, Farm operators; 1987	--	1.4	\$446,000	22.7	--	0.3	\$101,242		X	
6. Pedestrian facilities (H-27)	Local Governments; 1982-87			Combined with H-23							
7. Metal products coatings (H-32)	SCAQMD; 1982			Combined with H-20							
8. Machinery coatings (H-33)	SCAQMD; 1982			Combined with H-49							
9. Reduce use of aircraft auxiliary power units (H-38)	Airlines, Airport operators; 1982	--	0.1	\$1,630,000	88.0	--	0.09	\$1,434,400		X	
10. Adhesive manufacturing (H-40)	SCAQMD; 1985			Combined with H-21							
11. Reduced transit fares (H-41)	Transit operators; 1978-87	6.5	4.7	\$25,800,000	24.2/22.7	1.6	1.1	\$6,243,600/ \$5,856,600	X		
12. Ink manufacturing (H-51)	SCAQMD; 1983	--	0.2	\$176,000	53.0	--	.11	\$93,280		X	
13. Industrial coatings (H-52)	SCAQMD; 1983			Combined with H-49							
14. Ship lightering (H-55)	SCAQMD; 1987	--	0.2	\$766,000	46.0	--	.09	\$352,360			X
15. Auto free zones (H-58)	Local Governments, Private sector; 1987	--	0.9	\$12,000,000	22.7	--	0.2	\$4,053,448			X
16. Solid waste handling (H-61)	SCAQMD; 1981	0.1	0.1	\$360,000	44.0	0.04	0.04	\$158,400			X
17. Expanded transit level of service (H-63)	Transit operators, Local, State, & Federal Governments; 1980-87	4.0	3.0	\$103,000,000	24.2/22.7	1.0	0.7	\$24,926,000/ \$23,381,000		X	
18. Off-road motorcycle emission standards (H-64)	ARB, manufacturers; 1983	--	2.6	\$15,320,000	22.7	--	0.59	\$3,477,640		X	
19. Tax bunker fuels (H-66)	State Board of Equalization, Maritime shipping industry; 1982			Undetermined	7.0		Undetermined				X
20. Parking management: increased parking surcharge (H-67)	Employers and parking operators; 1987	--	6.2	\$1,100,000,000	22.7	--	1.4	\$294,700,000			X
21. Congestion pricing (H-68)	Caltrans; 1987	--	2.0	\$647,500,000	22.7	--	0.5	\$146,982,500			X
22. Automobile operation cost increase (Gas tax) (H-69)	State, 1979-87	0.5/6.7	0.5/4.9	\$500,000,000/ \$5,450,000,000	24.2/22.7	0.1/1.6	0.1/1.1	\$113,500,000/ \$1,318,900,000			X
23. Parking management: Reduced carpool parking cost (H-70)	Employers; 1979	0.1	0.1	\$86,400,000	24.2/22.7	0.02	0.02	\$20,908,800/ \$19,612,800			X
24. Increase use of rail, air, and bus for intercity travel (H-71)	PUC, Caltrans, Amtrak, Private carriers; 1987	--	1.3	Undetermined	22.7	--	0.3	Undetermined			X



## SCAG NON-RECOMMENDED PROGRAMS - RHC

D-2

Control Measure	Implementing Agency	Regional Reductions			L.A. City Proportional Share				City Staff Recommendation			
		Tons/Day 1982	Tons/Day 1987	Annualized Cost	%	Tons/Day 1982	Tons/Day 1987	Annualized Cost	Recommended	For further consideration	Reject	Insufficient data
25. Increase truck-trailer piggybacking on rail (H-73)	Railroads, Shippers, ICC, PUC; 1982	2.2	2.9	Undetermined	24.2/22.7	0.5	0.7	Undetermined	X			
26. Eliminate on-street parking (H-74)	Local governments; 1987			Undetermined	24.2/22.7			Undetermined		X		
27. Motor fuel blended with methanol and ethanol (H-75)	ARB; 1982			Undetermined	24.2/22.7			Undetermined				X
28. Paratransit (H-76)	Local governments and private operators; 1978-90			Undetermined	--	--	--	--	--	--	--	
29. Expand capacity and improve flow on highway network (H-77)	Caltrans; 1987	--	7.1	Undetermined	22.7	--	1.6	Undetermined		X		
30. Incorporate non-residential uses into residential areas (H-78)	Local governments; 1980			Undetermined	24.2/22.7			Undetermined				X
31. Employers Rideshare Program (H-79)	SCAQMD, Local governments; 1980			Undetermined	24.2/22.7			Undetermined				X
32. Emissions Tax (H-80)	ARB, Bureau of Automotive Repair, DMV; 1982			Undetermined	24.2/22.7			Undetermined				X
33. 18-year old licenses (H-81)	DMV; 1982	22.4	16.1	Undetermined	24.2/22.7	5.4	3.7	Undetermined			X	
34. Home goods delivery (H-82)	Private sector, Local governments; 1987			Undetermined	24.2/22.7			Undetermined				X
35. Coordinate tanker arrivals (H-83)	ARB, Coast Guard, Harbor operators; 1982			Undetermined				Undetermined			X	
36. Pipeline freight transport (H-84)	Private sector; 1987			Undetermined	24.2/22.7			Undetermined				X
37. Urban infill and orderly urban expansion (H-91)	Local, State, and Federal governments			Undetermined	24.2/22.7			Undetermined				X
38. Locate sensitive receptor (H-92)	Undetermined			Undetermined				Undetermined				X
39. Require integration of land uses in developments (H-93)	Undetermined			Undetermined	24.2/22.7			Undetermined				X
40. Require affordable housing in developments (H-94)	Undetermined			Undetermined	24.2/22.7			Undetermined				X
41. Incentives for low polluting industries (H-95)	Undetermined			Undetermined				Undetermined				X
42. Improve traffic flows through street modifications (H-96)	Undetermined			Undetermined	24.2/22.7			Undetermined				X
43. Peak period truck restrictions (H-97)	Undetermined			Undetermined	24.2/22.7			Undetermined				X
44. Government purchasing of low pollutant combustion equipment and non-reactive solvents (H-98)	Local governments; 1983			Undetermined				Undetermined				X
					24.2/22.7			Undetermined				X
45. Increase densities in urban areas (H-99)	Local governments			Undetermined	24.2/22.7			Undetermined				X
46. Industrial and commercial revitalization (H-100)	Local governments			Undetermined	24.2/22.7			Undetermined				X
47. Encourage rehabilitation of older areas (H-101)	Local and State governments			Undetermined	24.2/22.7			Undetermined				X
48. Improve bus movement (H-102)	Local governments			Undetermined	24.2/22.7			Undetermined				X
49. Improve airport access (H-103)	Local governments, Airport operators			Undetermined								

## SCAG NON-RECOMMENDED PROGRAMS - RHC

D-3

Control Measure	Implementing Agency	Regional Reductions		L.A. City Proportional Share			City Staff Recommendation			
		Tons/Day 1982	Annualized Cost 1987	%	Tons/Day 1982	Annualized Cost 1987	Recommended	For further consideration	Reject	Insufficient data
50. Design standards for new parking facilities (H-104)	Local Governments	Undetermined		24.2/ 22.7	Undetermined					X
51. Evaluate methods of solid waste conversion (H-105)	Local Governments	Undetermined			Undetermined					X
52. Growth management (H-106)	City of Los Angeles	Undetermined		24.2/ 22.7	Undetermined					X
53. Peak period delivery restrictions (H-107)	Local Governments	Undetermined		24.2/ 22.7	Undetermined					X
54. Parking Management Plan (H-108)	City of Los Angeles	Undetermined		24.2/ 22.7	Undetermined					X
55. Increases in bus benches and shelters (H-109)	Local Governments	Undetermined		24.2/ 22.7	Undetermined					X
56. Use of trees and landscaping (H-110)	Local Governments	Undetermined		24.2/ 22.7	Undetermined					X
57. Develop landfill disposal sites (H-111)	Local Governments, Sanitation Districts	Undetermined		24.2/ 22.7	Undetermined					X
58. Solid waste landfill siting (H-115)	Local Governments, Sanitation Districts	Undetermined		24.2/ 22.7	Undetermined					X
59. Identify and cluster trip attraction (H-116)	Local Governments	Undetermined		24.2/ 22.7	Undetermined					X

## SCAG NON-RECOMMENDED PROGRAMS - NOx

D-4

Control Measure	Implementing Agency	Regional Reductions			L.A. City Proportional Share				City Staff Recommendation			
		Tons/Day 1982	Tons/Day 1987	Annualized Cost	%	Tons/Day 1982	Tons/Day 1987	Annualized Cost	Recommended	For further consideration	Reject	Insufficient data
1. Energy conservation: Solar water heater retrofit - electric (N-3)	State and Local governments; 1979	1.2	1.2	Savings	28.0	0.59	0.59	Savings	X			
2. Emission controls on gas turbines (N-9)	SCAQMD; 1985	—	3.0	\$22,192,400	45.0	—	1.35	\$9,986,580			X	
3. Railroad diesel engines (N-12)	Federal and State governments; 1985	—	23.0	\$842,000					X			
4. Energy conservation: Solar water heater - new residences (N-15)	State and Local governments, Utilities; 1979	0.4	1.4	\$2,600,000						X		
5. Energy conservation: Marginal cost programs (N-17)	Utilities	Undetermined				Undetermined						X
6. Energy conservation: Street design (N-18)	Local governments	Undetermined				Undetermined						X
7. Strict energy conservation: In all government buildings (N-19)	Local governments	Undetermined				Undetermined						X
8. Solar energy incentive (N-20)		Undetermined				Undetermined						
9. Life cycle costing (N-21)		Undetermined				Undetermined						X
10. Pedestrian facilities (H-27)	Local governments; 1982-87	Combined with H-23										
11. Reduce use of aircraft auxiliary power units (H-38)	Airlines, Airport operators; 1982	—	0.7	*	38.0	—	0.6	*		X		
12. Reduced transit fares (H-41)	Transit operators; 1978-87	6.2	5.7	*	24.2/22.7	1.5	1.3	*	X			
13. Auto free zones (H-58)	Local government, Private sector; 1987	—	1.1	*	22.7	—	0.3	*			X	
14. Expanded transit level of service (H-63)	Transit operators; Local, State, and Federal governments; 1980-87	4.0	3.7	*	24.2/22.7	1.0	0.8	*		X		
15. Tax bunker fuels (H-66)	State Board of Equalization, Maritime shipping industry; 1982	Undetermined			7.0	Undetermined						X
16. Parking management: Increased parking surcharge (H-67)	Employees and parking operators; 1987	—	7.7	*	22.7	—	1.7	*			X	
17. Congestion pricing (H-68)	Caltrans; 1987	—	2.4	*	22.7	—	0.5	*			X	
18. Automobile operating cost increase (gas tax) (H-69)	State of California; 1979-87	0.5/6.3	0.6/6.1	*	24.2/22.7	0.1/1.6	0.1/1.4	*			X	
19. Parking management: Reduced carpool parking cost (H-70)	Employers; 1979	0.1	0.1	*	24.2/22.7	0.02	0.02	*			X	
20. Increase use of rail, air, and bus for intercity travel (H-71)	PUC, Caltrans, Amtrak, Private carriers; 1987	—	1.0	Undetermined	22.7	—	0.02	Undetermined			X	
21. Increase truck trailer piggybacking on rail (H-73)	Railroads, Shippers, ICC, PUC; 1982	5.9	5.6	Undetermined	24.2/22.7	1.4	1.3	Undetermined	X			
22. Eliminate on-street parking (H-74)	Cities, Counties	Undetermined			24.2/22.7	Undetermined				X		
23. Motor fuel blended with ethanol and methanol (H-75)	ARB; 1982	Undetermined			24.2/22.7	Undetermined						X
24. Paratransit (H-76)	Local governments, Private operators; 1978-90	Undetermined			24.2/22.7	Undetermined				X		

\* Costs for these measures are covered in the Hydrocarbon Section.



## SCAG NON-RECOMMENDED PROGRAMS - NOx

D-5

Control Measure	Implementing Agency	Regional Reductions			L.A. City Proportional Share			City Staff Recommendation	Insufficient data
		Tons/Day 1982	1987	Annualized Cost	%	Tons/Day 1982	1987	Annualized Cost	
25. Expand capacity and improve flow on highway network (H-77)	Caltrans; 1987	—	+13.4	Undetermined	22.7	—	+3.0	Undetermined	X
26. Incorporate non-residential uses into residential areas (H-78)	Cities and counties; 1980	Undetermined			24.2/22.7	Undetermined			X
27. Employers Rideshare Program (H-79)	SCAQMD, Local governments	Undetermined			24.2/22.7	Undetermined			X
28. Emissions tax (H-80)	ARB, California Bureau of Consumer Affairs, DMV; 1982	Undetermined			24.2/22.7	Undetermined			X
29. 18-year old licenses (H-81)	DMV; 1982	13.8	12.6	Undetermined	24.2/22.7	4.1	2.9	Undetermined	X
30. Home goods delivery (H-82)	Private sector, Local governments; 1987	Undetermined			24.2/22.7	Undetermined			X
31. Coordinate tanker arrivals in Harbor (H-83)	ARB, Coast Guard, Harbor operators; 1983	Undetermined				Undetermined			X
32. Pipeline freight transport (H-84)	Unknown	Undetermined			24.2/22.7	Undetermined			X

## SCAG NON-RECOMMENDED PROGRAMS - CO

D-6

Control Measure	Implementing Agency	Regional Reductions			L.A. City Proportional Share				City Staff Recommendation			
		Tons/Day 1982	1987	Annualized Cost	%	Tons/Day 1982	1987	Annualized Cost	Recommended	For further consideration	Reject	Insufficient data
1. Retrofit gasoline powered, non-farm off-road heavy duty vehicles (H-8)	ARB and construction industry; 1987	75.7	81.0	*	24.2/22.7	18.32	18.39	*	X			
2. Tow jet aircraft (H-10)	Airlines; 1987	—	15.9	*	88.0	—	14.0	*		X		
3. Exhaust emission controls, existing farm tractor - gasoline powered (H-17)	ARB, Farm operators; 1987	—	0.6	*	22.7	—	0.1	*		X		
4. Pedestrian facilities (H-27)	Local governments; 1982-87	Combined with H-23										
5. Reduce use of aircraft auxiliary power units (H-38)	Airlines, Airport operators; 1982	—	2.3	*	88.0	—	2.0	*		X		
6. Reduced transit fares (H-41)	Transit operators; 1978-87	52.0	38.8	*	24.2/22.7	12.6	8.8	*	X			
7. Auto free zones (H-58)	Local governments, Private sector; 1987	—	8.0	*	22.7	—	1.8	*			X	
8. Expanded transit level of service (H-63)	Transit operators; Local, State, and Federal governments; 1980-87	34.7	24.9	*	24.2/22.7	8.4	5.7	*		X		
9. Off-road motorcycle emission standards (H-64)	ARB, Manufacturers; 1983	—	2.6	*	22.7	—	0.59	*		X		
10. Tax bunker fuels (H-66)	State Board of Equalization, Maritime shipping industry, 1982	Undetermined			7.0	Undetermined						X
11. Parking management: Increased parking surcharge (H-67)	Employers and parking operators; 1987	—	51.0	*	22.7	—	11.6	*			X	
12. Congestion pricing (H-68)	Caltrans; 1987	—	16.6	*	22.7	—	3.8	*			X	
13. Automobile operating cost increase (gas tax) (H-69)	State of California; 1979-87	4.3/52.7	4.1/41.5	*	24.2/22.7	1.0/12.8	0.9/9.4	*			X	
14. Parking management: Reduced carpool parking cost (H-70)	Employers; 1979	1.2	0.9	*	24.2/22.7	0.3	0.2	*			X	
15. Increase use of rail, air, and bus for intercity travel (H-71)	PUC, Caltrans, Amtrak, Private carriers; 1987	—	3.1	Undetermined	22.7	—	0.7	Undetermined			X	
16. Increase truck-trailer piggybacking on rail (H-73)	Railroads, Shippers, ICC, PUC; 1982	24.7	31.1	Undetermined	24.2/22.7	6.0	7.1	Undetermined	X			
17. Eliminate on-street parking (H-74)	Local governments; 1987	Undetermined			24.2/22.7	Undetermined				X		
18. Paratransit (H-76)	Local government, Private operators; 1978-90	Undetermined			24.2/22.7	Undetermined				X		
19. Expand capacity and improve flow on highway network (H-77)	Caltrans; 1987	—	82.8	Undetermined	22.7	—	18.8	Undetermined		X		
20. Incorporate non-residential uses into residential areas (H-78)	Local governments; 1980	Undetermined			24.2/22.7	Undetermined						X
21. Employers Rideshare Program (H-79)	SCAQMD, Local governments; 1980	Undetermined			24.2/22.7	Undetermined						X
22. Emissions tax (H-80)	ARB, Bureau of Automotive Repair, DMV; 1982	Undetermined			24.2/22.7	Undetermined						X

## SCAG NON-RECOMMENDED PROGRAMS - CO

D-7

Control Measure	Implementing Agency	Regional Reductions			L.A. City Proportional Share				City Staff Recommendation			
		Tons/Day		Annualized Cost	%	Tons/Day		Annualized Cost	Recommended	For further consideration	Reject	Insufficient data
		1982	1987			1982	1987					
23. 18-year old licenses (H-81)	DMV; 1982	143.1	108.2	Undetermined	24.2/22.7	34.6	24.6	Undetermined			X	
24. Home goods delivery (H-82)	Private sector, Local governments; 1987	Undetermined			24.2/22.7	Undetermined						X
25. Pipeline freight transport (H-84)	Private sector; 1987	Undetermined			24.2/22.7	Undetermined						X
26. Government purchasing of low pollutant combustion equipment and non-reactive solvents (H-98)	Local governments; 1983	Undetermined				Undetermined						X

\* Costs for these measures are covered in the Hydrocarbon Section.



## SCAG NON-RECOMMENDED PROGRAMS - SOx

D-8

Control Measure	Implementing Agency	Regional Reductions			L.A. City Proportional Share			City Staff Recommendation			
		Tons/Day 1982	Tons/Day 1987	Annualized Cost	%	Tons/Day 1982	Tons/Day 1987	Annualized Cost	Recommended	For further consideration	Reject Insufficient data
1. Iron ore sintering operations - 70% reduction (S-2)	SCAQMD; 1982	7.7	7.7	\$1,208,300							
2. Iron ore sintering operations - 90% reduction (S-7)	SCAQMD 1982	1.1	1.1	\$3,360,000							
3. Fluid catalytic cracking - 90% reduction (S-8)	SCAQMD 1982	11.5	11.5	\$30,668,000	Based on present standards the region meets the SOx requirement						
4. Petroleum coke calcining - 90% reduction (S-9)	SCAQMD 1982	2.2	2.2	\$8,480,000							
5. Electric power generating equipment - 88% reduction (S-10)	SCAQMD 1982	56.3	56.3	\$843,000,000							
6. Fuel burning requirements (S-11)	SCAQMD 1985	--	17.0	\$18,000,000							
TOTALS		78.8	9.58	\$904,716,300							

## SCAG NON-RECOMMENDED PROGRAMS - TSP

D-9

Control Measure	Implementing Agency	Regional Reductions			L.A. City Proportional Share				City Staff Recommendation			
		Tons/Day 1982	1987	Annualized Cost	%	Tons/Day 1982	1987	Annualized Cost	Recommended	For further consideration	Reject	Insufficient data
1. Cooling towers (P-1)	SCAQMD; 1980	2.7	2.7	\$1,000,000	29.0	0.78	0.78	\$290,000		X		
2. Fugitive dust (P-2)	Local governments; SCAQMD; 1980	Undetermined			Undetermined							X
3. Paint manufacturing (P-5)	SCAQMD; 1981	0.2	0.2	\$1,860,000	34.0	0.07	0.07	\$632,400		X		
4. Woodworking operations (P-6)	SCAQMD; 1980	0.1	0.1	\$2,148,000	27.0	0.03	0.03	\$579,960			X	
5. Solid waste handling (P-7)	SCAQMD; 1981	0.5	0.5	\$2,181,000	44.0	0.22	0.22	\$959,640			X	
6. Fine particulates (P-8)	SCAQMD; 1985	—	1.0	\$4,092,000	25.0	—	0.25	\$1,023,000		X		
7. Pedestrian facilities (H-27)	Combined with H-23											
8. Reduce auxiliary power units for jet aircraft (H-38)	Airlines and airport operators	—	0.5	*	88.0	—	0.4	*		X		
9. Reduced transit fares (H-41)	Transit operators; 1978-87	0.7	0.7	*	24.2/22.7	0.2	0.2	*	X			
10. Auto free zones (H-58)	Local governments, Private sector; 1987	—	0.2	*	22.7	—	0.05	*			X	
11. Expanded transit level of service (H-63)	Transit operators, Local, State and Federal governments; 1980-87	0.5	0.6	*	24.2/22.7	0.1	0.1	*		X		
12. Tax bunker fuels (H-66)	State Board of Equalization, Maritime shipping; 1982	Undetermined			7.0	Undetermined						X
13. Parking management: Increase parking surcharge (H-67)	Employers and parking operators; 1987	—	1.1	*	22.7	—	0.3	*			X	
14. Peak-hour congestion pricing freeways (H-68)	Caltrans; 1987	—	0.3	*	22.7	—	0.07	*			X	
15. Automobile operating cost increase (gas tax) (H-69)	State of California; 1978-87	0/0.8	0/1.0	*	24.2/22.7	0/0.2	0/0.2	*			X	
16. Increase truck-trailer piggybacking on rail (H-73)	Railroads, Shippers, ICC, PUC; 1982	0.7	0.6	Undetermined	24.2/22.7	0.2	0.2	Undetermined	X			
17. Incorporate non-residential uses into residential areas (H-78)	Local governments; 1980	Undetermined			24.2/22.7	Undetermined						X
18. Employers Rideshare Program (H-79)	SCAQMD, Local governments; 1980	Undetermined			24.2/22.7	Undetermined						X
19. 18-year old licenses (H-81)	DMV; 1982	1.9	2.0	Undetermined	24.2/22.7	0.5	0.5	Undetermined			X	
20. Energy conservation: Solar water heater retrofit - electric (N-3)	State, Local governments, Utilities; 1979	0.6	0.6	Savings	28.0	0.17	0.17	Savings	X			
21. Energy conservation: Street lighting (N-4)	Utilities; 1979	0.06	0.04	Savings	27.0	0.02	0.01	Savings	X			

APPENDIX E  
DESCRIPTION OF REGIONAL PROGRAMS\*\* REQUIRING CITY IMPLEMENTATION  
RECOMMENDED BY SCAG

#H-4 - Modified Work Schedules

Use staggered work hours, including the 4/10 (4 days - 40 hour week) work schedule, to improve use of transportation facilities.

\*#H-5 - Parking Management: Carpool Preferential Parking

Reduce parking supply for single-occupant vehicles by 30% in all commercial/industrial employment centers in region and reserve for rideshare vehicles.

#H-13 - Voluntary Trip Reduction Program

A regional promotional effort aimed at limiting future increases in trip-making.

#H-23 - Increased Bicycle/Pedestrian Facilities

Decrease automobile trips through diversion to bicycle and pedestrian trips for all types of trip purposes. Both the LARTS 1976 Urban and Rural survey and the Los Angeles County 1977 Public Opinion Survey indicated that a sizeable percentage of all trips are made by walk and bicycle modes, and that if proper facilities were available an increased number of walk/bicycle trips would be made.

#H-34 - Employees Ridesharing

Expand the proposed Regional Transportation Plan employer carpool matching and promotion programs to include all firms in the SCAG Region and double the capture rates used in the RTP program. The capture rate would be increased to 20% of all employees in large firms with over 500 employees, to 15% of all employees in medium sized firms with between 250 and 499 employees, to 10% of all employees in small firms having 100-249 employees, and 2.5% of all employees in firms with less than 100 employees.

#H-35 - Traffic Signal Synchronization

Computer controls on traffic signals for 6,600 intersections (6000 local, 600 CALTRANS).

#H-87 - Los Angeles Downtown People Mover System (DPM)

Approximately four miles of grade separated, automated guideway transit (AGT) intended to serve the central business district (CBD) as a collection/distribution and circulation system. A 2.67-mile route is proposed with terminals at Union Station, the Convention Center and nine other stations which penetrate the CBD's activity centers and intercept regional transit stations and peripheral parking facilities.

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\* Programs Recommended for Rejection as Structured by City  
\*\* October 1978 Regional AQMP



#H-112 - Carpool Sign-ups for Government Employees

This measure is a means of implementing H-34 in the public sector and will assist in meeting the reduction goals outlined in H-34.

#H-113 - Purchase of Government Cars for Low Emission and High-Fuel Economy

This tactic requires government entities to purchase fleet vehicles which are at least 50% cleaner than emission controls presently in effect for the 1983 model year.

#H-114 - Regular Program of Inspection/Maintenance for Government Vehicles

This tactic requires all government entities to perform twice a year low emissions tuneups on all their vehicles including heavy-duty trucks and maintenance equipment.

#N-1 - Energy Conservation: Commercial, Institutional, and Industrial Audit Program

This tactic will reduce fuel combustion-related emission from electric power plants and from commercial, institutional, and industrial natural gas-fired equipment. More than two-thirds of total electricity and natural gas sales in the South Coast Air Basin are to institutional, commercial and industrial customers.

#N-2 - Energy Conservation: Residential Retrofit

This tactic will reduce fuel combustion-related emission from electric power plants and from residential natural gas-fired space heating and water heating units.

DESCRIPTION OF REGIONAL PROGRAMS REQUIRING CITY IMPLEMENTATION  
NOT RECOMMENDED BY SCAG

\* #H-58 - Auto-Free Zones

Develop 26 sites selected throughout the region, identified as high intensity of activity centers, to serve as auto-free zones.

#H-63 - Expanded Bus Service

Expand transit level of service by adding 1000 buses and 2200 route miles over the level indicated in the Regional Transportation Plan.

\* #H-67 - Parking Management: Increase Parking Surcharge

Increase automobile operating cost by doubling existing parking cost in commercial/industrial centers within region, imposing a \$1.00 minimum.

\* #H-70 - Parking Mangement: Reduced Parking Cost for Carpools

An \$18 per month parking subsidy to each carpool parking within 86 selected zones. These zones are high-activity commercial and industrial centers with an estimated 1990 employment of 2.5 million.

#H-74 - Eliminate On-Street Parking

Eliminate the use of on-street parking on selected arterials during peak hours.

#H-76 - Paratransit

Development of paratransit services as a collector mode in communities throughout the SCAG region.

#H-78 - Incorporate Non-Residential Uses into Residential Areas

This measure would provide for the amendment of general plans and zoning ordinances to permit selected non-residential uses in residential areas. Land uses such as neighborhood commercial and professional uses (food stores, drug stores, laundromats, etc.) could be incorporated into residential areas. This measure could potentially reduce VMT and, more importantly, auto trips by bringing these services closer to residences and providing an opportunity to walk or bicycle to these facilities.

#H-79 - Employers Rideshare Program

Adopt regulations to require employers who employ more than 100 employees at any one location to provide a ride-share option to 25% of employees through purchasing bus passes or providing carpool parking.

\* #H-83 - Coordinate Tanker Arrivals at Los Angeles/Long Beach Harbor to Achieve Uniform Arrival Rate

Establish tanker-arrival control to regulate arrivals into South Coast Air Basin, so that their emissions are at uniform rate.

#H-98 - Government Purchasing of Low-Pollutant Combustion Equipment and Non-Reactive Solvents

This measure would bring air quality considerations into the normal equipment purchasing activities of local government.

#N-3 - Energy Conservation: Solar Water Heater

This tactic will reduce fuel combustion-related emissions from electric power plants by reducing the amount of electricity used for electric water heaters in the residential sector.

#N-4 - Energy Conservation: Street Lighting

This tactic will reduce fuel combustion-related emissions from electric power plants by reducing the amount of electricity used for street lighting.

#N-15 - Energy Conservation: Solar Water Heater Program (New Residences)

This tactic would eliminate fuel combustion-related emissions from new natural gas-fired water heaters by substituting solar energy systems.

#N-17 - Energy Conservation, Marginal Cost Program

This tactic will reduce fuel combustion-related emissions from electric power plants and from natural gas-fired equipment.



## APPENDIX F

The accompanying table summarizes the emission reductions calculated to result from City implementation of recommended AQMP programs.

The figures were derived from several sources. In the initial phase of development of the City AQMP, program data forms were distributed to all agencies having programs considered to inclusion in the Plan. Emission reduction information was requested for each program. Region-wide programs included in the SCAG Regional AQMP are accompanied by emission reduction figures. In many instances, it was possible to apportion these reductions on the basis of the percentage of the regional emission-producing activity taking place within the City. The bases of this apportionment included industrial activity, population, and vehicle miles traveled. In some instances, it was necessary to consult individuals knowledgeable about a particular emission-producing activity to obtain an estimate of that industry's emissions.

# APPENDIX F. - EMISSION REDUCTIONS FOR CITY PROGRAMS

CITY PROGRAMS (1987)	RHC	CO	NO <sub>x</sub>	SO <sub>x</sub>	TSP
<b>I. <u>RECOMMENDED PROGRAMS</u></b>					
<b>A. City Programs Needed to Implement Regional AQMP</b>					
9. Voluntary Trip Reduction	2.57	21.02	3.11	.27	.41
17. Better Signalization & Signal Timing	0.30	2.90	+1.10	--	--
22. Employer Carpool/Ride Sharing	1.5	12.35	1.81	7.08	.32
31. Bike Plan & Bike Facilities Program	0.11	1.14	.09	.02	.02
37. Modified Work Schedules	1.09	9.37	.77	10.2	.06
83. Purchase Low Emission Government Vehicles	0.0	.05	.02	--	--
84. Low Emissions Tune-up for Government Vehicles	.09	.16	.75	--	--
<b>B. Programs for Addition and Substitution</b>					
1. Concept L.A. (Existing) }	1.13	4.25	1.62	NA	--
2. Concept L.A. (New) }					
15. Traffic Channelization	.20	7.8	NA	--	--
<b>II. <u>CONTRIBUTORY PROGRAMS</u></b>					
11. Increased Traffic Regulation	.04	.86	--	--	--
16. One-Way Streets	.02	.33	--	--	--
19. Short Term Parking Metering	ε	ε	ε	--	--
21. Parking Restrictions and Traffic Regulations	ε	ε	--	--	--
24. Pedestrian Facilities	.005	.09	--	--	--
25. Freeway Approach Programs	.03	.25	.04	.005	.007
26. Reversible Lanes	.02	.23	--	--	--
30. Bus Turning Lanes and Exemptions	ε	ε	ε	--	--

NA - Undetermined

ε - Very small positive number

APPENDIX F. - EMISSION REDUCTIONS FOR CITY PROGRAMS (cont.)

CITY PROGRAMS (1987)	RHC	CO	NO <sub>x</sub>	SO <sub>x</sub>	TSP
<b>II. <u>CONTRIBUTORY PROGRAMS</u></b>					
36. Vanpooling	€	€	€	€	--
41. Street Improvement Program	€	€	€	€	--
42. Street Maintenance Program	€	€	€	€	--
43. Bus Facilities Improvement Program	NA	NA	NA	NA	NA
53. Street Lighting System	.01	--	.04	€	.01
54. Flashing of Traffic Signals	€	€	€	€	--
61. Solar Hot Water Heaters	.03	--	.59	.07	.17
62. Solar Police Station	€	€	€	€	--
64. Solar Fire Station	€	--	€	€	€
65. Solar Office Buildings	€	--	€	€	€
66. Optimum Energy House	€	--	€	€	€
67. Solar Low-Income Housing	€	--	€	€	€
68. Solar Swimming Pool	€	--	€	€	€
<b>III. <u>FURTHER CONSIDERATION</u></b>					
5. Downtown People Mover	0.1	1.0	--	+1.4	--
18. Computerized Traffic Control	€	€	€	--	--
32. Expanded Airport Park & Ride Facilities	NA	NA	NA	NA	NA
33. Ground Access Facilities	NA	NA	NA	NA	NA
34. Palmdale Int'l. Airport	NA	NA	NA	NA	NA
35. Sepulveda Boulevard Tunnel Reconstruction	€	€	€	--	€
38. Parking Management Plan	NA	NA	NA	NA	NA
44. Require Proper Orientation in Subdivisions	--	--	€	--	€
45. Use of Trees & Landscaping	NA	NA	NA	NA	NA
48. City Building Code Revisions	2.33	--	2.92	4.47	4.95
50. Lighting Standards (Exterior)	--	--	€	€	€
51. Lighting Standards (Interior)	--	--	€	€	€
57. Methane Extraction	€	--	--	--	--
58. Air Transfer Devices	NA	NA	NA	NA	NA
63. Solar Power Plant	--	--	€	--	€
69. Solar City Power Plant	NA	NA	NA	NA	NA
71. Sun Access & Use	NA	NA	NA	NA	NA
82. Energy Conservation: Residential Retrofit	0.12	--	1.24	.66	--

NA - Undetermined

€ - Very small positive number



## APPENDIX G

### Legislative Programs

To help attain acceptable air quality in the Los Angeles Basin, the following "Legislative Programs" are required:

- a. Emission-Free Automobile Engine - There should be an intense lobbying effort with the Federal government by the City of Los Angeles to have the Federal government require automobile manufacturers to produce engines that would be comparable to the least polluting technology being utilized by any automobile manufacturer.
- b. Attainment Date - Every effort should be made to attain the Clean Air Act goals at the earliest possible date.
- c. Improved Transportation Systems - A vigorous fund-seeking effort for an augmented transportation system which encompasses both fixed rail and feeder bus lines with regional parking facilities should be considered. The possibility of obtaining federal funds should be investigated.
- d. Incentives for Clean Air - The City should enact enabling ordinances that would allow bonuses for businesses and industries improving air quality. These might include, but not be limited to, such incentives as bonus densities, reduced landscape requirements, etc.

## Acknowledgements

### Los Angeles City Planning Department

Calvin S. Hamilton	Director of Planning
Frank P. Lombardi	Executive Officer
Glenn F. Blossom	City Planning Officer
Glenn O. Johnson	Citywide Planning & Development Division Head

### Task Force

Alice D. Lepis	Senior City Planner, Task Force Head*
----------------	---------------------------------------

Jon Perica	City Planner, Citywide Elements Section
Gurdon Miller	Planning Assistant, Citywide Elements Section
Terry Speth	Planning Assistant, Citywide Elements Section

Robert H. Sutton	City Planner, Transportation and Data Support Section*
Phil Aker	City Planning Associate, Transportation and Data* Support Section
Rhonda Crawford	Planning Assistant, Transportation and Data Support Section

### Secretarial Support

Georgiana Fuikami  
Jeanne Crain  
Ernest Cook  
Katherine Nunez-Garcia  
Myrna Ang  
Merrlyn Washington

### Cover Design

Luis Quinones

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\*Former staff member, now with the City Department of Transportation.





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